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PUBLICATIONS OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE: NO. 27

THE COSTS OF MEDICAL CARE

A Summary of Investigations on The Economic Aspects of the Prevention and Care of Illness

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WITH A FOREWORD BY
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Chairman of the Committee

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FOREWORD

The provision of medical care has become one of the largest industries of the country. Each year the people of the United States spend more than three and one-half billion dollars for medical services and commodities. More than a million persons derive their living directly from the medical industry. The hospitals of the United States represent a capital investment of three billion dollars; the education, training, and facilities of medical practitioners represent three billions more. Within the lives of many now living, revolutionary changes in science have transformed medicine from a comparatively simple field into a complex domain. Formerly the physician could carry in his head the sum of his knowledge and in his saddle-bags the instruments and drugs of his profession. Today the physician must become acquainted with a vast technical literature of science; he must acquire proficiency in a difficult and ever-changing art; he must lean heavily and intelligently upon the special skill of his colleagues; he must utilize wisely the resources of hospitals, clinics, and laboratories.

The growth of medicine has brought large and difficult problems—problems in the education and training of professional practitioners, problems in building, equipping, and maintaining facilities, problems in public education, problems in organization, and problems in costs. Until recently people thought, if they thought at all about these matters, that somehow we should "muddle through." They rested content because medicine is in good hands: its practitioners are actuated by high ideals; its traditions are a noble heritage from the lamp of Greek learning.

But the unprecedented growth of medicine, the enormous expansion of personnel and facilities, the investment of billions of dollars have created issues from which society cannot escape merely through its own optimism or through confidence in the high character of medical practitioners.

Fifty years have seen the evolution of modern medicine, the application of preventive measures, the conquest of ancient plagues, and phenomenal reductions in infant and maternal mortality. Life has been prolonged; illness has been reduced. Millions, who formerly would have died in infancy, childhood, or early adult life, now escape traditional hazards. The tragedy lies in the fact that the very advances in science which have made these changes possible now bring serious financial burdens for medical care.

In many fields, industry has learned how to apply science to large-scale production and to reduce the cost of its unit product. But medical care is in its essence a personal service. Each improvement in medical science has brought increasing complexity as well as increasing perfection in medical art. It has therefore been inevitable that the cost of good medical care has increased. There is every likelihood that further improvement in the quality of medical care will bring still higher costs. We may anticipate that the costs of personal *services* will increase while the costs of machine-made *things* will decline. Increasingly, for many people the choice is to live with disease or to suffer with debts.

This paradoxical course of events has brought difficult and challenging problems. Medical care, of a kind and amount which the knowledge of the times dictates, has been carried further and further out of reach of millions of families. Much of the knowledge and skill which could prevent disease, reduce suffering, and restore the sick remains unused; physicians wait in vain in their offices for patients who never come; hospital beds are empty while millions suffer and tens of thousands perish for lack of care. Between the physician, dentist, nurse, or hospital—able and willing to provide service—and the persons who need it stands a barrier compounded of ignorance and of inability to pay. While medical practitioners labor as best they can, often without adequate equipment, facilities, or income, an uninformed or misguided public spends five hundred million dollars for useless or harmful patent medicines and nostrums and for the services of quacks and charlatans. The same people who think they cannot afford the price of adequate medical care not uncommonly spend even more for non-essentials and for luxuries.

Obviously the times demand more and better health education of the public; and this can be achieved. More money must be spent for medical care; and this is practicable if the expenditures can be budgeted and can be made through fixed, periodic payments—even as people are enabled to spend more for other commodities by installment than by outright purchase. Expenditures for medical care must be made wisely and efficiently; this is feasible if provision of care is coordinated with payment. The Committee's studies have demonstrated conclusively that these problems in the economics of medical care are not insoluble.

Difficulties in providing medical care and in paying for it are not peculiar to the United States. Many countries of the world have been wrestling with these problems. In some lands—especially in Europe—solutions have been sought in large national programs whereby the central or the local government becomes, in one form or another, the administrative agency for the provision of medical care and for the distribution of costs through taxation or through insurance schemes. Some European countries have already had forty or fifty years of experience in some form of government provision of medical care. These programs have resulted in great improvements; but they have also brought difficult technical and administrative questions.

A few years ago American observers of the medical scene at home and abroad recognized that the day for "muddling through" was passing; the time for planned action was at hand. As they cast about, they found in domestic or European programs no obvious or satisfactory solution to the needs of the American people. They saw that although the true interests of those who need medical care and of those who provide it are identical, the common welfare is obscured by a fog of misunderstanding. The medical practitioner finds his lot difficult. The family which suffers a serious illness that entails a large volume of medical care often finds itself bankrupt. It is not surprising that professional publications contain a steady flood of complaints against the "burden of free care" and that lay magazines and newspapers publish diatribes against "the high cost of medical care." Characteristically, the focus is upon the trees, not upon the forest; both professional and lay groups are aware of the immediate issues but fail to grasp the fundamental and underlying causes.

Under these conditions, the Committee on the Costs of Medical Care was born. It was organized in 1927, at a conference called by ten physicians, three economists, and three non-medical persons engaged in public health work, and attended by approximately sixty persons representing these three fields and the general public. Virtually all who had been consulted agreed that there was a definite need for a new agency to study the economic factors affecting the organization of medicine.

Although small at first, the Committee finally included approximately fifty persons.[*] After careful preliminary study, the Committee dedicated itself to a five-year program of fact-finding. It engaged a Research Staff and gave to these investigators the largest possible independence in the execution and presentation of their studies. The Committee has included within its membership representatives of professional associations and educational institutions. Though it has received important assistance from many agencies [†] and is grateful to them and to its many individual friends for advice and cooperation, it has been responsible to no previously established organization. It has taken up the cudgels for no special group; it has served only in the interest of the public.

Eight independent foundations [‡] gave generously of their funds in support of the Committee's objectives.

The original investigations of the Research Staff have been published in twenty-six documents,[§] addressed to the three major questions in the Committee's program:

I. What data are now available showing the incidence of disease and disability requiring medical services and what are the established facilities for dealing with them?

II. What do existing services cost the people and what return accrues to the physician and other agents furnishing such services?

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[*] For a list of the membership, see the end of this volume.

[†] The American Medical Association, the American Dental Association, the National Bureau of Economic Research, the National Tuberculosis Association, the Committee on the Grading of Nursing Schools, the Metropolitan Life Insurance Company, the United States Public Health Service, the United States Bureau of Internal Revenue, the National Organization for Public Health Nursing, the Vermont Commission on Country Life, the Social Science Research Council, the American Hospital Association, the Catholic Hospital Association, and the American College of Surgeons.

[‡] The Carnegie Corporation, the Josiah Macy, Jr., Foundation, the Julius Rosenwald Fund, the Milbank Memorial Fund, the New York Foundation, the Rockefeller Foundation, the Russell Sage Foundation, and the Twentieth Century Fund.

[§] The list appears at the end of this volume.

III. What specially organized facilities for medical care serving particular groups of the population may now be found, and how do they compare in adequacy and economy with unorganized services?

The present volume, Publication No. 27, is in the nature of a summary and analysis of this new literature on the economics of medical care.* Here, under the skillful guidance of Doctor Falk, who has been in charge of the Research Staff, and two of his colleagues, Doctor Rorem and Miss Ring, have been brought together the principal findings from five years of investigation. With the new data which originated in the Committee's studies they have merged the pertinent information derived from inquiries pursued by other agencies. Although this document is in itself a more or less complete digest of the subject, it is in a larger sense only a key to the extensive literature to which it refers. The three major questions with which the Committee has wrestled have been recast and the facts which bear upon them are treated as a synthetic whole.

Medical care is a commodity which is produced and sold; but it is more than a commodity for it is primarily a personal service. Its dimensions are varied; its quality and value are difficult to measure; the economic problems concerned with its costs are complex. Though the Committee's studies reveal that the need for medical care is substantially the same among all economic classes in the population, the ability to pay for it varies with income. In consequence, the economic problems may be quite different in one community from those in another, and the solution for the problems of one fraction of the population may be no solution for another.

The Committee on the Costs of Medical Care was "Organized to study the economic aspects of the prevention and care of sickness, including the adequacy, availability, and compensation of the persons and agencies concerned." It has, after five years, a formulation of the care the people need and the care they receive. It has ascertained how much is spent for medical care and what the cost would be if people were receiving such care, in kind and quality, as their needs dictate. Reliable data on the incomes of medical practitioners have been accumulated and on the circumstances under which they practice.

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* We are indebted to the Metropolitan Life Insurance Company for a contribution towards the cost of printing this document.

The ability to pay for medical care will probably increase with the march of time, but it may always be different for various economic or geographic fractions of the population. There will continue to be new problems ever arising before us. Nevertheless we should fail of our opportunity if with the new wealth of information we did not guide or institute such changes as are necessary in the economic organization of medicine, to the end that the true needs of the people shall be more nearly met than they are today.

With this analysis of the facts before us,we can look forward with a new and more intelligent optimism. We can face the future with confidence that the gap between knowledge and application will be narrowed and that the toll of preventable sickness and premature death will be reduced. So far as the past and the present point the way for the future, the contents of this volume (and of the volume which follows it *) provide signposts for those who must now take up the torch.

RAY LYMAN WILBUR,
Chairman of the Committee.

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* See Publication No. 28, which contains the Committee's Recommendations.

PUBLICATION PROCEDURE
AND
RESPONSIBILITY FOR REPORTS

Reports of the Committee on the Costs of Medical Care are prepared by staff members. When completed they are tentatively approved by the executive committee, and are then printed and sent in the form of galley proof to the members of the general committee. The final revision is approved by the executive committee. Each finally revised report will include any dissenting opinions of committee members which they may request be published.

Reports are issued as the work of the particular staff member preparing them; neither the Committee as a whole nor its individual members should be considered responsible for the detailed contents of these publications. The final report with recommendations, as well as preliminary reports of a general nature, may be considered to represent the views of the Committee as a whole.

From the minutes of the executive committee meeting February 13, 1928, and of the general committee meeting October 27, 1928.

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PART I

INTRODUCTORY

CHAPTER I

INTRODUCTION

> "We believe that the conditions of perfect health, either public or personal, are seldom or never attained, though attainable; that the average length of human life may be very much extended; and its physical powers greatly augmented; that in every year . . . . . thousands of lives are lost which might have been saved; that tens of thousands of cases of sickness occur, which might have been prevented; that a vast amount of unnecessarily impaired health, and physical debility, exists among those not actually confined by sickness; that these preventable evils require an enormous expenditure and loss of money, and impose upon the people unnumbered and immeasurable calamities, pecuniary, social, physical, mental and moral, which might be avoided; that means exist, within our reach, for their mitigation or removal, and that measures for prevention will effect infinitely more than remedies for the cure of disease."

So far as pertinence and validity characterize it, this quotation from the famous report in which Lemuel Shattuck urged sanitary reforms in Massachusetts in 1858 might have been taken from the current writings of any one of a hundred observers on the state of the public health. It is doubtful that one could write a more incisive indictment of conditions in 1932 than is contained in these words which have been ringing in the ears of informed physicians and sanitarians for seventy-five years.

In all but one essential the medical problem is today exactly what it was in Shattuck's day. The people were not receiving the best medical service which was available then; they are not receiving the best medical service which is available now. In 1858, however, all but a few advanced scholars were reconciled to the disparity between what could be done and what was being done to prolong life and to prevent disease. To the situation which exists today no informed person, either liberal or conservative, is reconciled. What is new about the medical problem is a widespread conviction that it can and should be solved.

Two lines of evolution have converged to produce this change in attitude. One is the enormous increase in medical knowledge and the vast improvements in medical technique which have taken place since 1858; the other is the growing demand for the right to health on the part of the public.

The growth in medical knowledge and facilities, even though it has been greater in the last three-quarters of a century than in all the preceding period since the dawn of history, does not alone explain present-day demand for medical care. Even if modern medical facilities had been available in 1858, there would not have been then, as there is now, resentment at inability to utilize them. Lemuel Shattuck's contemporaries were still in thrall to the eighteenth-century doctrine that "the great mass of people can never rise above the lowest level of subsistence." Trained as the masses were to regard poverty as a divine discipline, they would have considered it presumptuous to demand the best of anything—even the best of so vital a service as medical care. The pursuit of happiness is acknowledged as the inalienable right of all people; and in so far as happiness is dependent on bodily comfort and physical well-being the people now claim the benefit which science and technology can furnish through the hand of the physician.

The seventy-five years since Shattuck's time have seen the growth of modern medicine and the growth of public expectation and demand for its services. Without the tremendous improvements in medical science which have occurred since 1858, there would have been no problem of the effective and economical distribution of medical service. On the other hand, without an expanding concept of human rights there would have been no public demand that some way be found to provide the improved service for all the people. The problem of medical costs today is the offspring of both the scientific renaissance and the social revolution. It is the inevitable outcome of two developments—the growing ability of medicine to provide, and the increasing desire of the people to receive, adequate medical care.

Since medicine first accelerated its production of health "goods" and humanity increased its determination to procure more of these "goods," there has been no question of the convergence of these two trends. The only uncertainty was how they should meet. Should it be with the disastrous impact of one body of prejudices against another, or should it be with the quiet, constructive fusion of informed and deliberative minds? In 1927 the intricate problem of medical costs had come to a focus. It required simplification by careful thought, or there was danger that it would be vastly complicated by hasty and ill-advised action. Thoughtful observers recognized one course as socially constructive; the other as socially disastrous. The Committee on the Costs of Medical Care was organized as the result of an agreement by medical and lay groups to inaugurate a program of dispassionate, scientific inquiry. Out of five years of investigation have come the twenty-six volumes which embrace the studies of the Committee's Research Staff. This twenty-seventh volume is a summary.

The problem of medical care is more acute today than ever before, partly because on every side enormously augmented possibilities of health confront us. Yet everywhere about us are evidences of maladjustments in the availability of medical facilities and their utilization. Physicians, as a whole, are unoccupied between one-third and one-half their working time; one-third of the hospital beds are empty most of the year; thousands of nurses seek employment, but in vain. Meanwhile millions suffer and tens of thousands die from ailments which might be cured or alleviated by medical aid.

There is no quarrel between the 122 million people in the United States who seek medical care and the one million physicians, nurses, dentists, and other practitioners who are equipped to provide it. True, there is a high economic wall between them, but both groups are eager to scale it. There is no disagreement in the objective; there is only uncertainty with regard to the procedure. Both groups believe that they should and can come together on one side of the barrier, but neither group knows precisely what kind of ladder is to be used, or who is to take the initiative in constructing it.

The primary purpose of this volume is to analyze the "costs of medical care." The procedure is to dissolve the central problem into its constituents; to separate truth from fancy; to place the apparently reliable facts and their interrelations into an ordered picture of the whole. Then from analysis the study proceeds to synthesis—to a formulation of the problem in a series of brief generalizations. Finally, the authors present their views upon the lines of evolution which remedial action should take.

It has been said, here and elsewhere, that the Committee's program projected a scientific study of the costs of medical care. And this has sometimes been interpreted to mean that the Committee laid upon itself an injunction to restrict its activities to fact-finding. Such a notion is based upon a narrow understanding of both the method and spirit of scientific study. Science is not confident that a question or its answer has been defined until it has been defined quantitatively. The method of science demands that the quantitative measurements must be, as nearly as the state of knowledge and technique permits, objective and reproducible. The spirit of science also demands that the mind shall study the facts and inquire into their apparent meaning. Science were but a sterile field in the domain of knowledge if its disciples had not the widest freedom of inquiry into the meaning of facts.

It is with this concept of purpose and objective that the Committee's Research Staff has carried out its original studies and has prepared this summary volume. They have sifted both facts and opinions—their own as well as others'—in the effort to attain, as nearly as possible, an objectivity and an unbiased and unimpassioned verity which the nature of the problem warrants. No special group—lay or professional—has been their master; no special interest has been their concern. The contents of this volume are presented as the best analysis which the authors could effect in the limited time at their disposal.

In order that the underlying premises upon which this analysis rests should be clear and unambiguous, it may be profitable to recapitulate here the simple but basic criteria by which the facts have been judged.* These may be considered as " articles of faith," fundamental in a concept of good medical care and essential in evaluating the current state of affairs:

1. Good medical care is limited to the practice of rational medicine based on the medical sciences.
2. Good medical care emphasizes prevention.
3. Good medical care requires intelligent cooperation between the lay public and the practitioners of scientific medicine.
4. Good medical care treats the individual as a whole.
5. Good medical care maintains a close and continuing personal relation between physician and patient.
6. Good medical care is coordinated with social welfare work.

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* For a comprehensive discussion of these principles, *cf.* Publication No. 22, listed at the end of this volume.

7. Good medical care coordinates all types of medical services.
8. Good medical care implies the application of all the necessary services of modern, scientific medicine to the needs of all the people.

Both professional and lay groups have been complainants against the *status quo*. The facts presented in this volume show that both have had cause, but that neither has understood the underlying reasons for the difficulties. The public and the medical practitioners are not antagonists; they are co-plaintiffs against a scheme of things whose origins are rooted in history and whose present structure has been builded largely without design. Both groups are consciously or unconsciously in revolt against a wasteful, ineffective, and almost chaotic system of practice. Five years of study have failed to reveal any simple formula for the reduction of the costs of medical care and for an equalization of the burden of payment. The outcome of the Committee's inquiry points to a need for fundamental re-organization of medical practice, together with education of the people to spend even larger sums, if necessary, to care for illness and to maintain health.

The present volume discovers no panacea for the problems with which the Committee has been engaged; but careful study of these pages should provide a sound working basis upon which interested persons may build analyses of their local problems. The document contains in Parts II to VI the basic facts, and in Parts VII and VIII a discussion of recent developments in methods of providing medical care and in methods of paying for it. Part IX is a summary. The authors are not unaware that to read this volume is a laborious task. But they are convinced that it is a task from which none is exempt who is able and willing to weigh the problems of a nation's health.

We may say, with George E. Vincent:

> "It looks as if society means to insist upon a more effective organization of medical service for all groups of people, upon distribution of the costs of sickness over large numbers of families and individuals, and upon making prevention of disease a controlling purpose. Just how these ends will be gained only a very wise or a very foolish man would venture to predict. One thing seems fairly certain: In the end society will have its way." *

When society has its way, it were well that it have an enlightened way. To this cause the authors dedicate their volume.

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* George E. Vincent, "The Doctor and the Changing Order," *Bulletin of the New York Academy of Medicine*, 1926, Vol. 2, p. 6.

CHAPTER II

A PRELIMINARY SUMMARY OF TOTAL MEDICAL COSTS, PERSONNEL, AND FACILITIES

Inasmuch as this report is concerned primarily with the costs of medical care, it will be useful to establish at the outset the magnitude of the nation's medical bill and a catalogue of the personnel and agencies which provide medical care and for whose services the expenditures are made. These are presented briefly and almost categorically in this chapter. The derivation of the data and their more intimate characteristics will be described in the following parts of the volume.

THE TOTAL COSTS OF MEDICAL CARE

How much money do the people of the United States spend for medical care? A compilation for the year 1929 * reveals a total national medical bill of $3,656,000,000, or $30.08 per capita.

Of the total expenditures, approximately 2.9 billions of dollars consist of patients' fees and other direct expenditures by individuals and families, 510 millions of dollars are financed by governments through tax funds, 182 millions represent voluntary contributions and donations, and 79 millions are medical expenditures by industry. Individual patients and their families pay 79 per cent, governments 14 per cent, philanthropic agencies 5 per cent, and industry 2 per cent of the total. The composition of the total and the sources from which the funds were derived are shown in Table 1 and Fig. 1.

The two largest single items in the total medical bill are expenditures for physicians in private practice ($1,090,000,000) and the expenditures for the construction, maintenance, and operation of hospitals ($856,000,000).† The third largest

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* With a few minor exceptions the data in Table 1 are derived for the year 1929. Those items which are cumulated from records for other years do not change the totals or the proportions in any substantial degree. In computing per-capita costs, the mid-year population for 1929 is taken as 121,526,000.

† The annual capital expenditure for new construction is included in the total costs of hospitals. This item is approximately equal to the fixed charges on the total capital investment in all hospital property.

TABLE 1

TOTAL EXPENDITURES FOR MEDICAL CARE IN THE UNITED STATES (a)

(All Figures in Thousands of Dollars)

Service	Total	Sources of Funds				Per Capita (1929)
		Patients	Governments	Philanthropy	Industry	
Physicians in private practice(b)	$1,090,000(c)	$1,040,000(c)	....	....	$50,000	$ 8.97
Dentists in private practice(b)	445,000(c)	445,000(c)	....	....	....	3.66
Secondary and sectarian practitioners	193,000	193,000	....	....	....	1.59
Graduate nurses, private duty	142,000	142,000	....	....	....	1.17
Practical nurses, private duty	60,000	60,000	....	....	....	0.49
Hospitals: operating expenses	656,000	278,000	$300,000	$ 54,000	24,000	5.40
Hospitals: new construction	200,000	....	100,000	100,000	....	1.64
Public health	121,000	....	93,500	27,500	....	1.00
Private laboratories(d)	3,000	3,000	....	....	....	0.02
Orthopedic and other supplies(d)	2,000	2,000	....	....	....	0.02
Glasses(d)	50,000	50,000	....	....	....	0.41
Drugs(d)	665,000	665,000	....	....	....	5.47
Organized medical services(e)	29,000	7,790	16,000	210	5,000	0.24
Total	$3,656,000	$2,885,790	$509,500	$181,710	$79,000	$30.08

(a) With a few minor and unimportant exceptions the data apply to the year 1929. They are probably representative of any normal year of recent times.

(b) Physicians and dentists holding part-time salaried positions are included with private practitioners. Expenditures for the services of those employed in hospitals, clinics, public health departments, and organized medical services are included under total expenditures for the respective agencies.

(c) These totals include payments by government and philanthropic agencies to private practitioners for services to indigent persons.

(d) Not included in other items.

(e) University, industrial, and Army and Navy medical services, exclusive of hospital care.

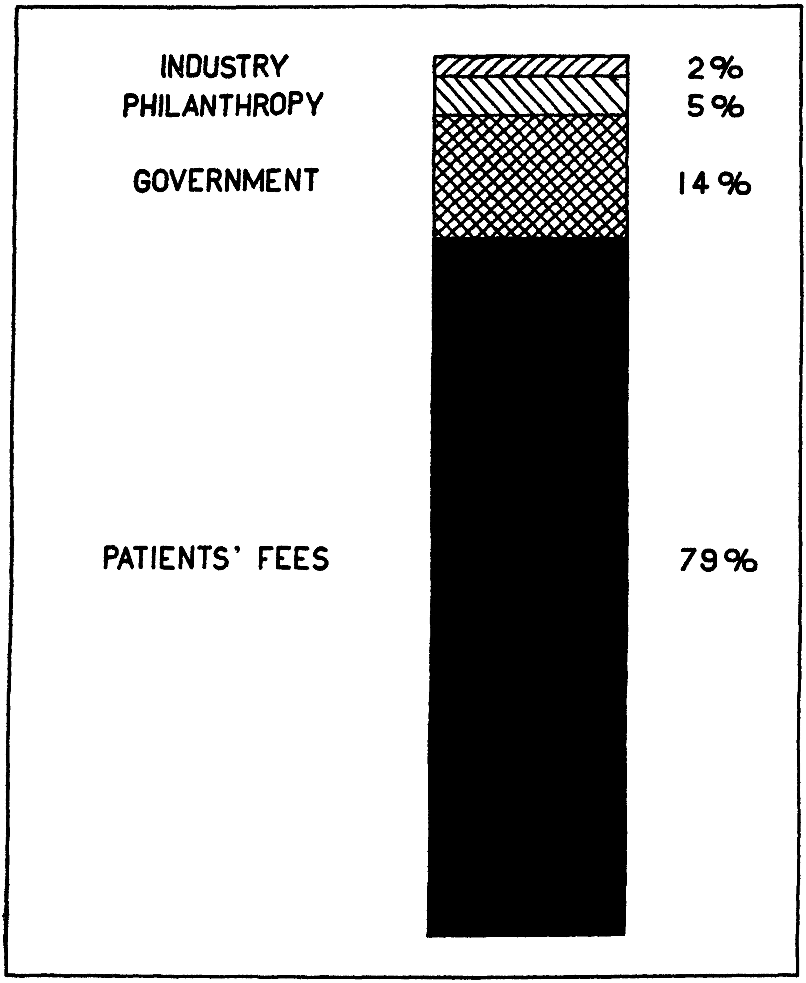

FIG. 1. SOURCES OF THE FUNDS WHICH PAY THE NATION'S BILL FOR MEDICAL CARE

item consists of expenditures for drugs and medicines ($665,000,000); the fourth is expenditures for dentists in private practice ($445,000,000). These first four items are together responsible for 3.06 billions of dollars in the total of 3.66.

The contributions from patients are made principally to the private professional practitioners, to the drug stores, and to the hospitals. Government funds are used chiefly to support hospitals—especially for those devoted to the care of patients afflicted with tuberculosis or mental disease—which are almost wholly supported by local, state, and federal governments. The reason for this is obvious: the community as a whole, acting through its official authorities, has assumed the burden of preserving the public peace and order and of guarding the public health. Patients afflicted with tuberculosis or mental disease are ordinarily incapacitated for long periods of years and the cost of institutional care is in most cases too large to be borne by the individuals or their families. The costs of these illnesses thus become a community rather than a family burden. In addition to providing hospital care for the tuberculous and for those afflicted with mental disease, governments bear a large part of the cost of general hospital care. For all three types of hospitals combined, government expenditures equal 47 per cent of the total.

The contributions of philanthropic agencies for medical care are made principally to hospitals. Two-thirds of the funds which they provide for this purpose consist of donations for the construction of new buildings and the provision of new facilities. In addition to their financial support of hospitals, philanthropic individuals and agencies contribute 27.5 millions of dollars toward the work of voluntary public health agencies.

Industry spends approximately 79 millions of dollars a year in the provision of medical care. Most of this sum takes the form of expenditures to physicians in private practice for services to wage-earners whose need for medical care originates under circumstances which place the responsibility upon the industry. In addition, industrial organizations spend some 29 millions of dollars to maintain hospitals and to provide medical services for wage-earners and their dependents.

It will appear later (Chapter VIII) that the total national income in 1929 was nearly 91 billions of dollars. Thus the $3,656,000,000 spent for medical care consumes 4.0 per cent of the national income.

THE TOTAL COSTS OF SICKNESS

The total costs of sickness are of course considerably larger than the costs of medical care. In addition to expenditures for services from medical practitioners and agencies, sickness entails loss of wages during incapacitation and far larger losses due to premature death. Although it is not possible to measure the magnitude of these items accurately, it may be of some interest to gauge their size from approximate estimates.

Wage Loss Due to Sickness.—A number of surveys have shown that at any specified time about 2 per cent of the population is incapacitated for work on account of sickness. One might argue, accordingly, that sickness causes a loss of production amounting to 2 per cent of the total, or about 1.9 billions of dollars annually. But this argument is not tenable, because it neglects the reserve of unemployed persons available to fill the gaps caused by illness. There are, however, certain losses in production which are clearly chargeable to illness. For those diseases which are not characterized by sudden onset, commonly several days elapse before the sick person makes up his mind to absent himself from work and seek medical attention. During this period, and again if he resumes work prematurely, his output is not up to par. Undoubtedly, numerous accidents are the direct or indirect result of attempts to continue work while sick. Several studies which have shown the correlation between the incidence of accidents and of illness place this argument above the realm of mere speculation.

In the case of children attending school, sickness not infrequently prolongs the time required to complete the curriculum and, obviously, increases the cost of the child's education to the community and to the family. These education costs due to illness can be considered analogous to wage losses for those who are gainfully employed. A very conservative estimate places these losses for both wage-earners and school children, for the country as a whole, between 250 and 500 million dollars annually.

The Money Value of Preventable Deaths.—The losses which have already been cited are enormous; but far larger losses result from sickness which terminates in premature mortality. Dublin has calculated that about one-third of the deaths which occur every year are preventable, even under present-day conditions.* Although much of the preventable mortality occurs in infancy and childhood, human beings at these ages have considerable monetary value, in the sense that a large capital investment has been made in bringing a child into the world and in carrying it through each year of life. Dublin and his associates have calculated that it costs about $7,238 to rear a child to age eighteen, the age of self-support, in those wage-earning families of the country whose total family resources are about $2,500 a year.† Including interest on the capital, and making due allowance for those who do not survive age eighteen, the cost is increased to a little more than $10,000, exclusive of the money value of the mother's care. It is estimated that about 120,000 babies die annually from preventable conditions during the first year of life. Babies are found to have an imputed capital value of more than $9,000 if they are boys, and $4,600 if they are girls. On this basis, the capital lost in this country from preventable infant mortality is in excess of $750,000,000 a year. At ages 25 to 29 the number of deaths regarded as due to entirely preventable causes exceeds 30,000 a year. The capital value of the individuals who die at these ages, based on net future earnings, amounts to another $750,000,000. Computing the value of life at each age period, Dublin has estimated that the total capital value of the lives which can be saved annually through the application of modern preventive medicine and public health measures is in excess of 6 billion dollars. In other words, the cost of sickness through premature mortality is more than half again as large as the cost of medical care.

The cost of preventable mortality (6 billions) added to the costs of medical services (3.6 billions) and the wages lost on account of disability (0.25 to 0.5 billions) brings the total to about 10 billion dollars a year, or approximately $80 per person in the population. In view of these colossal costs of sickness it seems unnecessary to emphasize the vast possibility of financial saving in preserving life and health. The total annual expenditure of the American people for public health is probably about $1 per capita today. Considering the enormous value of our vital resources and the inroads made by sickness, the investment of such a small sum to conserve the public health indicates poor business policy as well as extraordinary disregard of social opportunity.

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* Louis I. Dublin, *Health and Wealth,* New York, 1928, p. 9.

† *Ibid.,* p. 8.

PERSONNEL ENGAGED IN THE PROVISION OF MEDICAL CARE AND THE SALE OF MEDICAL COMMODITIES

Nearly 1,100,000 persons devote part or all of their time to the provision of medical care for the people of the United States, and in turn rely upon this activity to provide them with a livelihood through payments made by, or in behalf of, the recipients of their services. The total personnel is almost equally divided between those who act in the capacity of private practitioners (Table 2) and those who serve in medical institutions or are engaged in the sale of medical commodities

TABLE 2

PERSONNEL IN PRIVATE PRACTICE AND EXPENDITURES FOR THEIR SERVICES

Practitioners ([a])	Number	Expenditures		
		Total	Per Cent	Per Capita
Physicians	121,000	$1,090,000,000	56.5	$8.97
Dentists	56,800	445,000,000	23.0	3.66
Graduate nurses	118,000	142,000,000	7.3	1.17
Practical nurses	150,000	60,000,000	3.1	0.49
Midwives	47,000	3,000,000	0.2	0.03
Chiropodists	4,900	15,000,000	0.8	0.12
Optometrists	20,200	50,000,000([b])	2.6	0.41
Osteopaths	7,700	42,000,000	2.2	0.35
Chiropractors	16,000	63,000,000	3.3	0.52
Naturopaths	2,500	10,000,000	0.5	0.08
Religious healers	10,000	10,000,000	0.5	0.08
Total	554,100	$1,930,000,000	100.0	$15.88

([a]) Including part-time personnel.
([b]) Including glasses which they dispense.

(Table 3). Correspondingly, expenditures for the services of private practitioners (1.9 billions of dollars) consume 53 per cent of the total; expenditures for the services received from institutions and for medical commodities (1.7 billions of dollars) consume the other 47 per cent. Of the money spent for institutions and commodities, approximately 40 per cent is expended for personnel who serve in these institutions or who are engaged in the sale of commodities, and 60 per cent is spent for the commodities or to meet operating expenses and the costs of new capital investment.

Under present economic conditions, the patient, as a rule, receives his medical care from a licensed practitioner with whom he or his representative makes direct financial arrangements. The practitioner may be a physician, a dentist, a registered nurse, a practitioner who devotes his time to limited services—such as maternity care, refraction of the eyes, or care of the feet—or he may be a member of one of the healing cults. The choice of practitioner rests with the patient; and the practitioner maintains independent economic relations with each of his patients. This is the private practice of medicine.

TABLE 3

PERSONNEL IN MEDICAL INSTITUTIONS

Personnel	Number
Physicians	21,000
Dentists	5,600
Graduate nurses	77,000
Student nurses	80,000
Public health, visiting, and industrial nurses	18,800
Pharmacists	132,000
Lay personnel(a)	196,000
Total	530,400

(a) In hospitals and clinics and in public health agencies.

Traditionally, medical service is a form of personal service, and most of the problems associated with the costs of medical care find their origin in this fact. In an age of mass production and standardized commodity units, medical care has remained comparatively unaffected by industrial evolution. The individual needs of the patient have always required and still require individual application of the techniques of medical diagnosis and therapy. Whereas bread, houses, and garments are now produced in standard, machine-made units for all except the very wealthy members of society, the physician, the dentist, and the nurse, irrespective of the economic level of the patient, must of necessity render him individualized, personal service, the cost of which must be commensurate with the education, capital investment, and standards of living of the practitioner.

It is doubtful if the solution of the problem of "the high costs of medical care" may be sought in the reduction of the total volume of professional services which may result from improvements in the methods of treatment. Although medicine has followed the trend of other arts and sciences in the direction of using more elaborate equipment and more complicated techniques, the result has not been the replacement of personnel through mechanization—as in industry—but rather of increasing, layer upon layer, the amount of service required in the diagnosis and treatment of disease. And in our modern times, personal service is a costly service. If the people of the United States were receiving the medical care which they need and which the dictates of medical art and science warrant, the army of medical practitioners would have to be larger than it is at present.

Everything seems to point to expansion rather than contraction in the volume and complexity of medical care required. Despite the reduction in the incidence of certain diseases, practically all advances in medical technique have so far involved more physician-time, more dentistry, and more nursing. It is conceivable, however, that the costs of medical services may be brought nearer to the means of the majority of the general population through savings in the cost of providing services. This may be accomplished through: (1) the coordination of personnel so as to assign various tasks to those who can perform them most effectively and most economically; (2) the reduction of overhead expenses and business risks; and (3) the conservation and full utilization of the professional time and energy of highly-trained practitioners, especially by reducing or entirely eliminating unoccupied and non-productive periods.

The total number of independent practitioners upon whom patients may call for the prevention and care of illness is approximately 550,000. This number includes 121,000 physicians, 57,000 dentists, and 268,000 graduate and practical nurses in private duty service. In addition, the limited practitioners (midwives, chiropodists, and optometrists) and members of the healing cults (osteopaths, chiropractors, etc.) are almost exclusively private practitioners. Some of the primary practitioners of medicine (physicians, dentists, and nurses) are on a salaried, as distinct from a private practice, basis.

TABLE 4

HOSPITAL BEDS IN THE UNITED STATES, 1930

Class of Hospital	Control		Total
	Government	Other	
General(a)	115,160	261,311	376,471
Nervous and mental(b)	413,347	16,844	430,191
Tuberculosis	50,079	13,510	63,589
Special(c)	8,011	17,409	25,420
Institutional	20,424	6,808	27,232(d)
Total	607,021	315,882	922,903

(a) "General" includes industrial and surgical.

(b) "Nervous and mental" includes feeble-minded and epileptic.

(c) "Special" includes maternity; convalescent and rest; isolation; children's; eye, ear, nose, and throat; orthopedic; skin and cancer; drug and alcohol; chronic and incurables; trachoma; venereal and others.

(d) These beds have been allocated between government and other auspices on the basis of the ratios which obtained for each type in 1928.

In addition to the individuals who serve as private or salaried personnel, numerous institutions are utilized in the provision of medical care. Chief among these are the 7,000 hospitals which alone represent a capital investment of more than 3 billion dollars and which have a total capacity of over 900,000 beds (Table 4). In 1930, two-thirds of the hospital beds were maintained in institutions operated under federal, state, and local government auspices. Nearly 8,000 clinics and out-patient departments of hospitals, about 60,000 drug stores, and a smaller number of private laboratories and other medical institutions were available. Furthermore, the states, the large and small cities, and a few of the rural areas are served by health departments which employ full-time personnel.

Considering the number of persons engaged in medical service, the variety of the institutions and facilities which they utilize, and the enormous magnitude of the capital investment which these represent, it is not surprising that the provision of medical care has become a large and costly undertaking. Nor is it difficult to understand that in a rapidly changing world there have developed incongruities in the functional arrangements under which medical agencies operate. In the following chapters the economic structure of the medical industry is analyzed in terms of its constituent elements and their interrelations.

A SUMMARY OF PER-CAPITA EXPENDITURES FOR MEDICAL CARE

When the total expenditures for medical care in the United States are cumulated for the year 1929, they equal 3.6 billion dollars, equivalent to almost exactly $30 per capita. It will be seen in Chapter IX that of this total 3.2 billions (equivalent to $26.82 per capita) are spent in the local communities of the country through the private expenditures of the population or through the expenditures of local official, industrial, and philanthropic agencies. The private purchase of medical care by the members of white families in the United States accounts for 2.7 billions, or $24.58 per capita; and the sums spent by all persons, white and colored, amount to 2.9 billions, or $23.58 per capita. For convenience, the constituent items in each of these totals have been brought together from various sections of this volume and are summarized in Table 5. In each of the four totals, expenditures for the services of private practitioners constitute the largest single item. They consist principally of the costs for the ministrations of physicians and dentists; they are determined to a lesser degree by expenditures for nursing, refractions and eye-glasses, and the charges for secondary or sectarian practitioners. The costs for hospitals and sanatoria and for drugs and medicines account for nearly all the remainder in each total; public health expenditures are of almost trifling magnitude; and all other items combined are negligible.

Of special interest are the items showing the per-capita expenditures of white families for the medical care which they purchase privately and on their own initiative. This category includes 2.7 billion dollars of a total of 3.6 spent in the entire country. It represents not only the bulk of the nation's medical bill, but more particularly the bulk of the nation's medical care. It involves the comparatively large expenditures of the rich and the small expenditures of the poor; it embraces the varying influences of education, place of residence, competition for funds within the family budget, and a host of other variables which determine the expenditures for medical care purchased on the initiative of the individual. A detailed analysis of the circumstances under which these expenditures are made appears subsequently. Here it will suffice if attention is focussed upon a few general facts concerning the source and the disposition of this sum of nearly three billion dollars.

TABLE 5

ANNUAL PER-CAPITA EXPENDITURES FOR MEDICAL CARE IN THE UNITED STATES, 1928 TO 1931

Type of Service	United States (a)	Local Communities (b)	Private Purchase	
			White Persons (c)	All Persons (d)
Private practitioners(e)	$15.88	$12.90	$17.50	$16.70
Hospitals and sanatoria	7.04	5.99	3.20	3.09
Drugs and medicines(f)	5.47	6.65	3.17	3.10
Public health	1.00	0.67	......	......
Miscellaneous	0.69	0.61	0.71	0.69
All types	$30.08	$26.82	$24.58	$23.58

(a) Total per-capita expenditures in the United States (see Table 1).

(b) Estimated per-capita expenditures in the local communities of the United States (see Chapter IX).

(c) Per-capita expenditures of white persons for medical care purchased privately, based on the records of 9,000 white families (see Chapter V).

(d) Estimated per-capita expenditures of all persons in the United States for medical care purchased privately (see Chapter V).

(e) All categories and including the costs of drugs and medicines which these practitioners dispense.

(f) Other than drugs and medicines dispensed by private practitioners or not included in other items.

Assuming that the white families of the United States are distributed with respect to annual income and place of residence in the proportions shown in Appendix Table 1-A, it develops that 41 per cent of the 2.7 billions spent by these families are expenditures made by those residing in cities of 100,000 population and more, 24 per cent by those in cities of 5,000 to 100,000 population, and 35 per cent by those in towns with less

TABLE 6

THE COMPOSITION OF EACH MILLION DOLLARS SPENT FOR MEDICAL CARE PURCHASED PRIVATELY BY WHITE FAMILIES IN THE UNITED STATES, 1928-1931

Family Income	Estimated Per Cent of All White Families	Expenditures for Services (or Commodities) of the Specified Type								
		Physician	Dentistry	Hospital	Drugs and Medicines	Nursing	Refractions and Glasses	Secondary Practitioners and Cultists	All Other	All Types
Under $1,200..	15	$ 30,340	$ 5,761	$ 12,086	$ 12,031	$ 2,626	$ 1,692	$ 2,377	$ 1,295	$ 68,208
$1,200– 2,000..	35	94,285	29,166	29,971	35,639	10,264	4,698	4,142	8,073	216,238
2,000– 3,000..	24	87,442	36,379	30,405	30,608	10,542	5,123	4,328	5,659	210,486
3,000– 5,000..	16	80,119	41,594	23,599	25,966	15,240	5,946	3,754	7,842	204,060
5,000–10,000..	7	57,507	35,639	16,876	14,879	23,617	4,624	4,698	3,671	161,411
10,000 and over	3	48,465	36,249	17,413	9,969	19,068	3,264	2,321	2,848	139,597
All incomes.....	100	$398,058	$184,788	$130,350	$129,092	$81,357	$25,347	$21,620	$29,388	$1,000,000

than 5,000 each and in rural areas. Of each million dollars spent by these families (Table 6), nearly $400,000 is paid to physicians, nearly $185,000 more to dentists, $130,000 to hospitals, and approximately the same amount to drug stores. Nurses receive only $81,000 of this hypothetical million dollars, $25,000 is spent for refractions and the purchase of eye-glasses, $22,000 is paid to secondary practitioners (chiropodists and midwives) and cultists, and $29,000 applies to all other miscellaneous items.

Perhaps of equal significance in the data of Table 6 are the proportions which are spent by the families of various economic levels. Of the typical million dollars which these families spend, approximately equal amounts (about $200,000, each) come from the budgets of the 35 per cent of the families with annual incomes of $1,200 to $2,000, the 24 per cent with $2,000 to $3,000, and the 16 per cent with $3,000 to $5,000. These three income groups, which together include 75 per cent of all white families, are responsible for 63 per cent of the total expenditure. The poor (15 per cent of the families, with incomes of less than $1,200) spend only 7 per cent of the total. The well-to-do and the rich (*i. e.* the families with incomes of $5,000 and more) constitute but 10 per cent of the families, yet they provide 30 per cent of the income of medical practitioners, hospitals, and drug stores. These proportions are the effects of widely different per-capita expenditures among the rich and the poor. It will be seen later that the annual per-capita expenditure is $115 in families with incomes of $10,000 and more, and is only $9.25 per capita in families with incomes of less than $1,200.

The expenditures for medical care are quite unlike for rich and poor and the amount and the kinds of care received are highly dissimilar. Correspondingly, the incomes of practitioners and agencies which serve particularly the rich or the poor are also quite unlike. The consequences of these conditions receive close analysis in following chapters. They are essential to an understanding of the economic ills which have befallen the practice of medicine, and of those functional maladjustments in the provision of medical care of which the people complain.

PART II

THE NEED AND PURCHASE OF MEDICAL CARE

CHAPTER III

ILLNESS AND THE NEED FOR MEDICAL CARE *

The following pages present in concise review data accumulated from various sources for the purpose of measuring the incidence of illness and the need for medical care. National records on mortality, special surveys on morbidity, the experiences of particular groups in the population, and other data have been brought together to provide a brief survey of vital statistics pertinent to this volume.

THE INCIDENCE OF ILLNESS AS REVEALED BY MORTALITY STATISTICS

For many years, records of mortality furnished the only comprehensive measure of the health of the people, and in the United States such records were reasonably complete and reliable only in the states included in the Registration Area for Deaths. The mortality rate is a crude instrument with which to gauge the state of the national health because it provides no insight into the frequency of non-fatal disease. As a measure of fatal illness the rate of mortality is indispensable.

Mortality has been declining. A comparison of death rates in 1930 and in 1900 in the same group of states (Registration States of 1900)† reveals that the frequency of death was lower in 1930 than in 1900 in each age group. At the higher ages, *i. e.*, beyond age 55, the decrease in mortality was small; but in middle age the improvements have been substantial, and in the younger ages phenomenal. The mortality rate between the ages of 10 and 35 was halved in this thirty-year interval; at ages 5 to 10 it decreased 60 per cent; and among children under 5 the reduction was no less than 66 per cent. These facts are portrayed graphically in Fig. 2.

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* We are indebted to Selwyn D. Collins of the Office of Statistical Investigations, and Dean K. Brundage of the Office of Industrial Hygiene and Sanitation, United States Public Health Service, for assistance in the preparation of this chapter.

† The Registration Area for Deaths has been increasing in size. Hence, the comparison of death rates is made for the states included in the area in the earlier year, namely Connecticut, District of Columbia, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

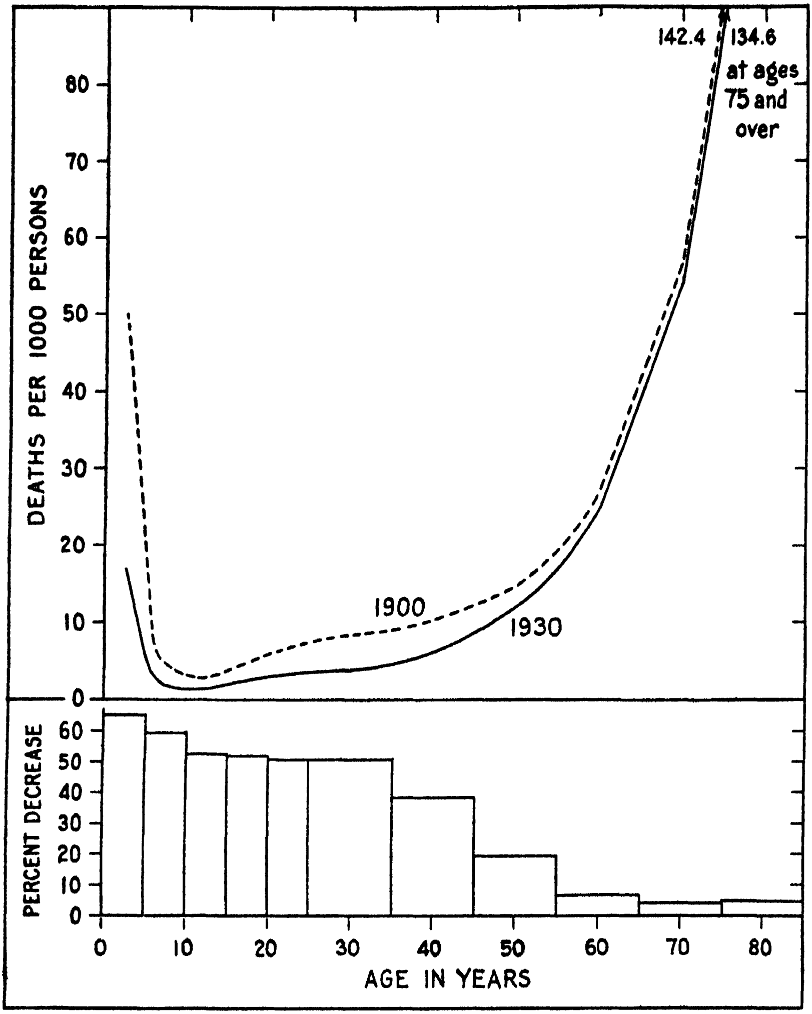

FIG. 2. COMPARISON OF MORTALITY, ACCORDING TO AGE, IN 1900 AND IN 1930, AND THE PERCENTAGE DECREASE IN THE DEATH RATES IN THREE DECADES

Based on data for the original registration states of 1900.

During the past three decades, marked changes have occurred in the death rates for several important causes. From Figs. 3 and 4 it may be seen that mortality from typhoid fever, diarrhea and enteritis, diphtheria, and tuberculosis of the respiratory system has declined with gratifying abruptness. During recent years a fall is noted in the frequency of deaths reported as due to nephritis (acute and chronic), and to external causes other than automobile accidents. On the unfavorable side, the rate of death from automobile accidents has been mounting with alarming rapidity since the advent of the motor car.

Deaths reported as due primarily to cancer and other malignant tumors, to diseases of the heart, appendicitis, and diabetes mellitus exhibit ascending trends. Since 1920 the suicide rate has increased appreciably, and in 1930 it slightly exceeded the previous peaks of 1908 and 1915. Extremely wide variations appear in the year-to-year mortality from influenza and pneumonia (exclusive of bronchopneumonia). Relatively little change has occurred during the last twenty years in the mortality ascribed to cerebral hemorrhage and softening of the brain.

In 1930, by far the most important cause of death in the Registration Area of the United States was the group of diseases encompassed by the category " diseases of the heart." This is the leading cause of death by no insignificant margin; the rate is more than twice that of the second most important group, namely, pneumonia (all forms) and influenza. Third in importance numerically are the malignant growths. The next three causes in 1930 were in order of their frequency: (*a*) nephritis (acute and chronic); (*b*) cerebral hemorrhage including embolism, thrombosis, and softening of the brain; and (*c*) accidental and unspecified external causes including automobile accidents. It is interesting to note that tuberculosis (all forms), which less than 40 years ago was captain of the men of death, now occupies seventh place among the causes of mortality. An important disease category in infancy (congenital malformations and diseases of early infancy) accounts for so many deaths as to give it eighth place in the list of causes for all ages combined. As a further illustration of the importance of infant and early childhood mortality in

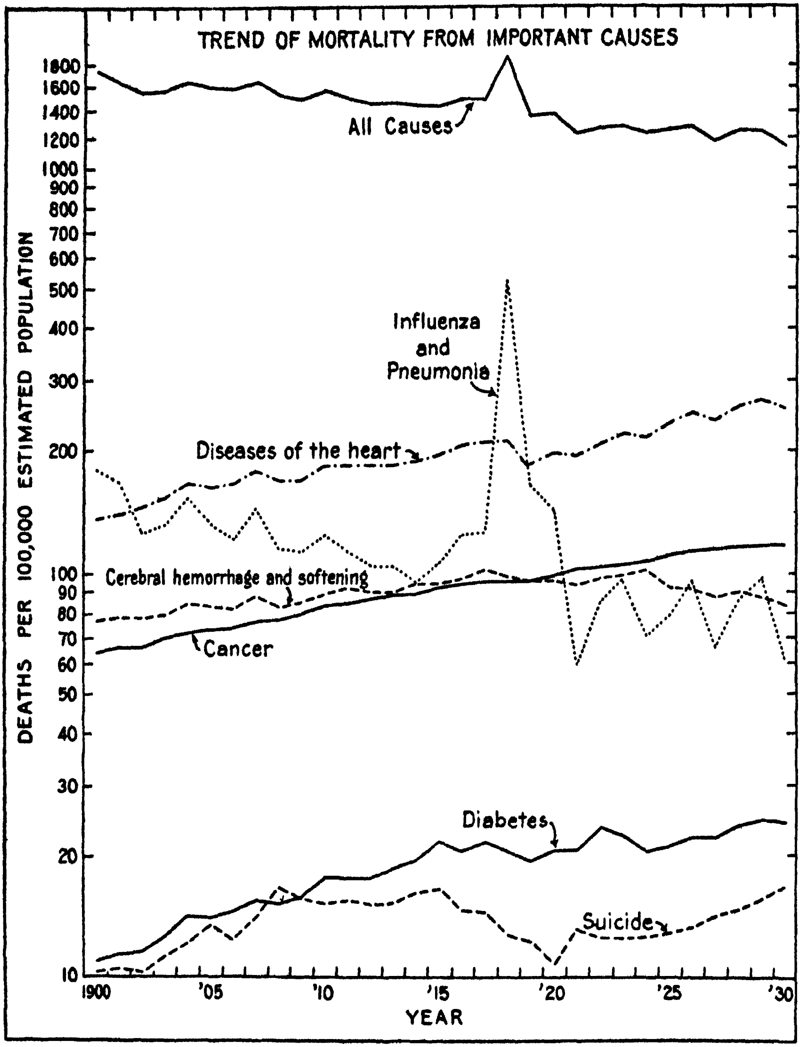

FIG. 3. THE TREND OF MORTALITY FROM THE PRINCIPAL CAUSES, 1900 TO 1930

Based on data for the original registration states of 1900.

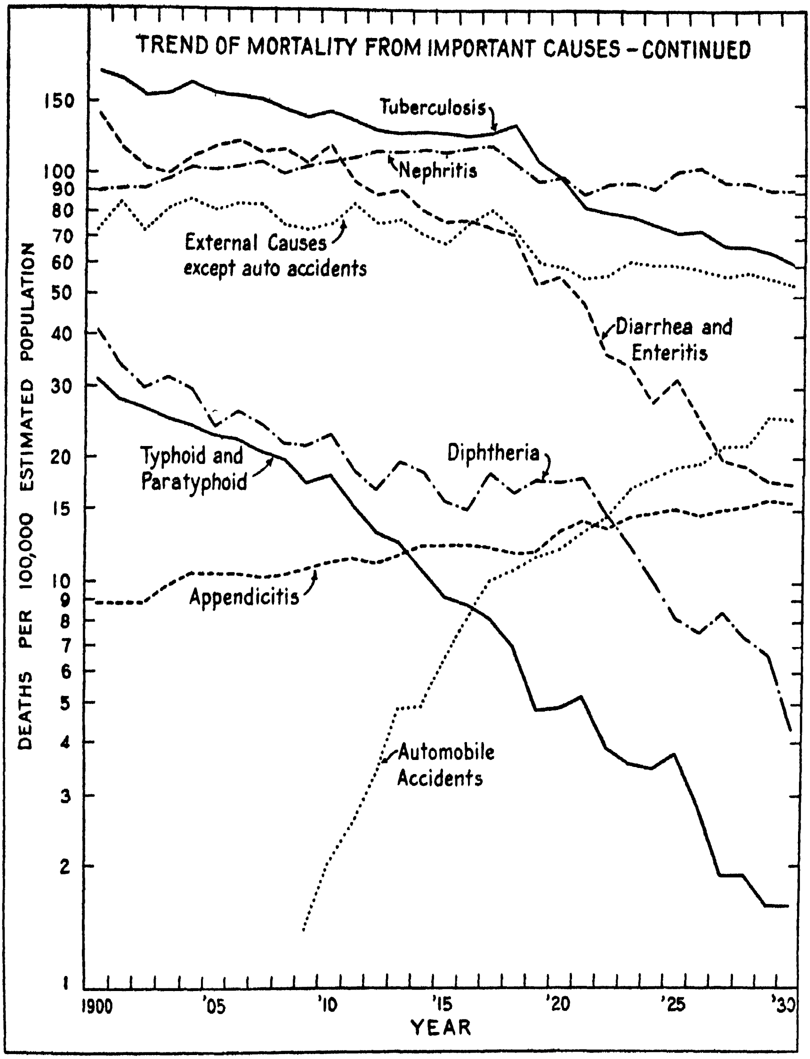

FIG. 4. THE TREND OF MORTALITY FROM THE PRINCIPAL CAUSES, 1900 TO 1930

Based on data for the original registration states of 1900.

the general death rate, the next highest rate is due to diarrhea and enteritis, of which the major part is ascribed to children under two years of age. Tenth place is occupied by diseases of the arteries, atheroma, aneurysm, etc. These causes of death delineate in fairly complete fashion the mortality picture in 1930, for they cover 81 per cent of the deaths occurring in that year.

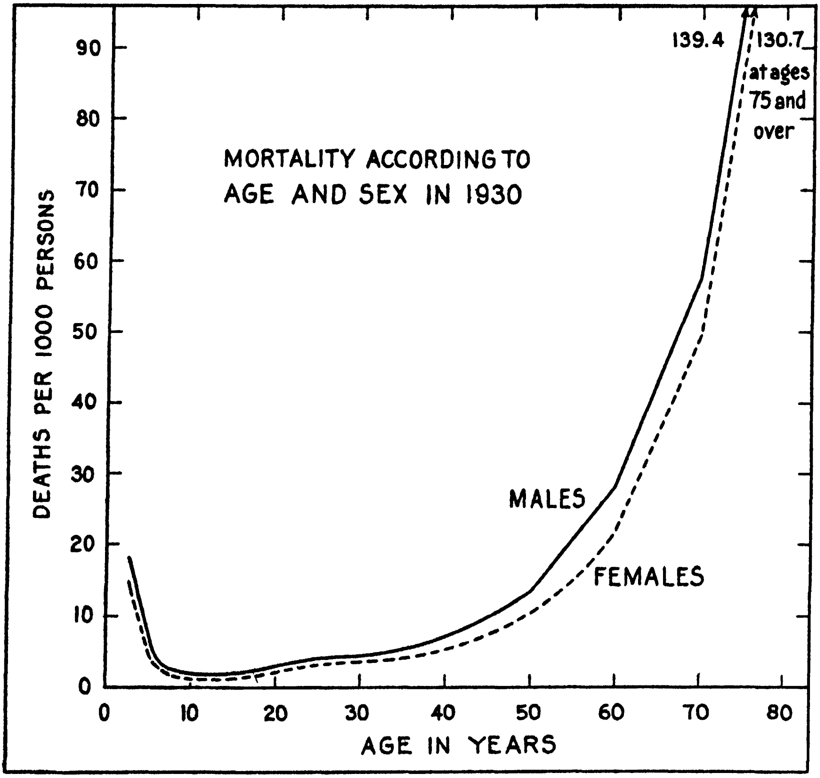

FIG. 5. MORTALITY FROM ALL CAUSES, 1930

Based on data for the original registration area of the United States.

Rates of mortality according to age and sex reveal differences that are by no means negligible. In 1930, the male rate was higher than the female rate in each broad age group (Fig. 5). Even the hazards of childbearing failed to bring the female death rate up to the male level in the years of early adult life. There are two periods in life during which the male exceeds the female mortality by more than 20 per cent, *i. e.*, from birth to about age 15, and from about age 35 to age 65.

THE INCIDENCE OF ILLNESS AS REVEALED BY MORBIDITY STATISTICS

Statistics of illness are of two broad types, dealing with (*a*) the *prevalence* of illness, measured by the number of persons sick on a particular day, and (*b*) the *incidence* of illness, measured by the number of cases occurring in a specified period of time.

The most extensive data available on the prevalence of illness were collected some 15 years ago in surveys conducted by the Metropolitan Life Insurance Company,* and Fig. 6 shows some of the findings in terms of the number of persons sick from each of the principal causes, per 100,000 of the population surveyed. In a prevalence survey the chronic diseases stand out among the important causes because of their long duration, whereas the acute colds and short illnesses are not included in the proportions in which they would appear in an incidence study. None the less, the respiratory diseases appear among the highly prevalent causes of illness. Of the eight most frequent causes of sickness as revealed in the prevalence studies, five are serious—*i. e.*, are often fatal—and three are of a chronic nature.

In contrast with Fig. 6 which pictures illness as revealed in prevalence studies, Fig. 7 shows the incidence of illness from the principal causes over a period of twelve months, as determined by periodic surveys of white families in 18 states.† In terms of incidence, the minor respiratory diseases stand out far above any other cause. Of the eight most frequent causes of illness in the incidence list, only three are among the eight most frequent causes of illness in the prevalence list. Respiratory diseases, accidents, and digestive disorders appear among the most frequent causes in both types of surveys.

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* The data from several of these surveys were compiled in a single paper, *cf.* Margaret L. Stecker, *Some Recent Morbidity Data*, Metropolitan Life Insurance Company, 1919.

† See Publication No. 26, listed at the end of this volume.

The needs for medical care are determined primarily by the incidence and nature of illness. It will appear shortly that incidence varies according to age. It is therefore important to note that the causes of illness are not of constant incidence in the various age periods. Fig. 8, based upon data accumulated from many sources,* summarizes the available information on this subject. In this chart the total length of the bar represents the illness rate from all causes in a specified age period. Each bar has been divided into eight parts, representing the rates for the seven principal causes and for all other causes in that age period. It will be noted that in each

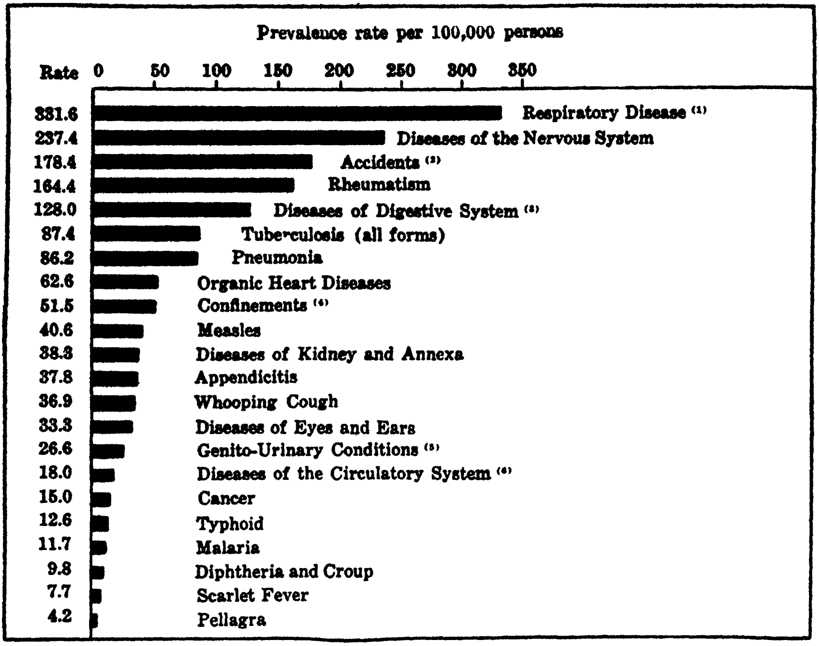

FIG. 6. THE PRINCIPAL CAUSES OF ILLNESS AS FOUND BY SURVEYS OF THE PREVALENCE OF SICKNESS ON A SPECIFIED DAY

(1) Except pneumonia and tuberculosis
(2) And other external causes
(3) Except appendicitis
(4) And other puerperal conditions
(5) Except of the kidney and annexa
(6) Except organic heart diseases

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* *Cf.* Publication No. 22, listed at the end of this volume.

age period the seven principal causes account for a very large proportion of all illness; " all other causes " are responsible for small fractions.

In every age period the respiratory diseases are the principal cause of illness. The rates from all causes, as well as from respiratory diseases, are particularly high at ages under 15. For these ages the communicable diseases are the second most frequent cause, but above age 15 these diseases do not appear among the seven specific categories of the most important causes of sickness. Diseases of the digestive system, which occupy third place under 15 years of age, become the second most frequent cause of illness at age 15, and remain in this position until the end of life. Injuries are an important cause of illness at every age. Among children under 15, skin disorders and diseases of the eyes and ears are also frequent, but these are not among the important causes among adults. In their place there appear for young adults the puerperal conditions and genito-urinary diseases. For middle-aged and

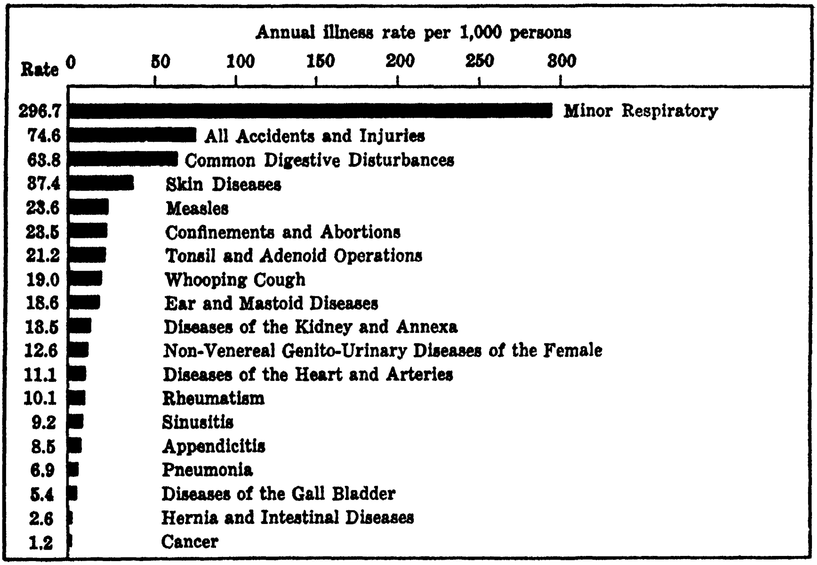

FIG. 7. THE PRINCIPAL CAUSES OF SICKNESS

Based on data for white families under observation for twelve consecutive months, 1928-1931.

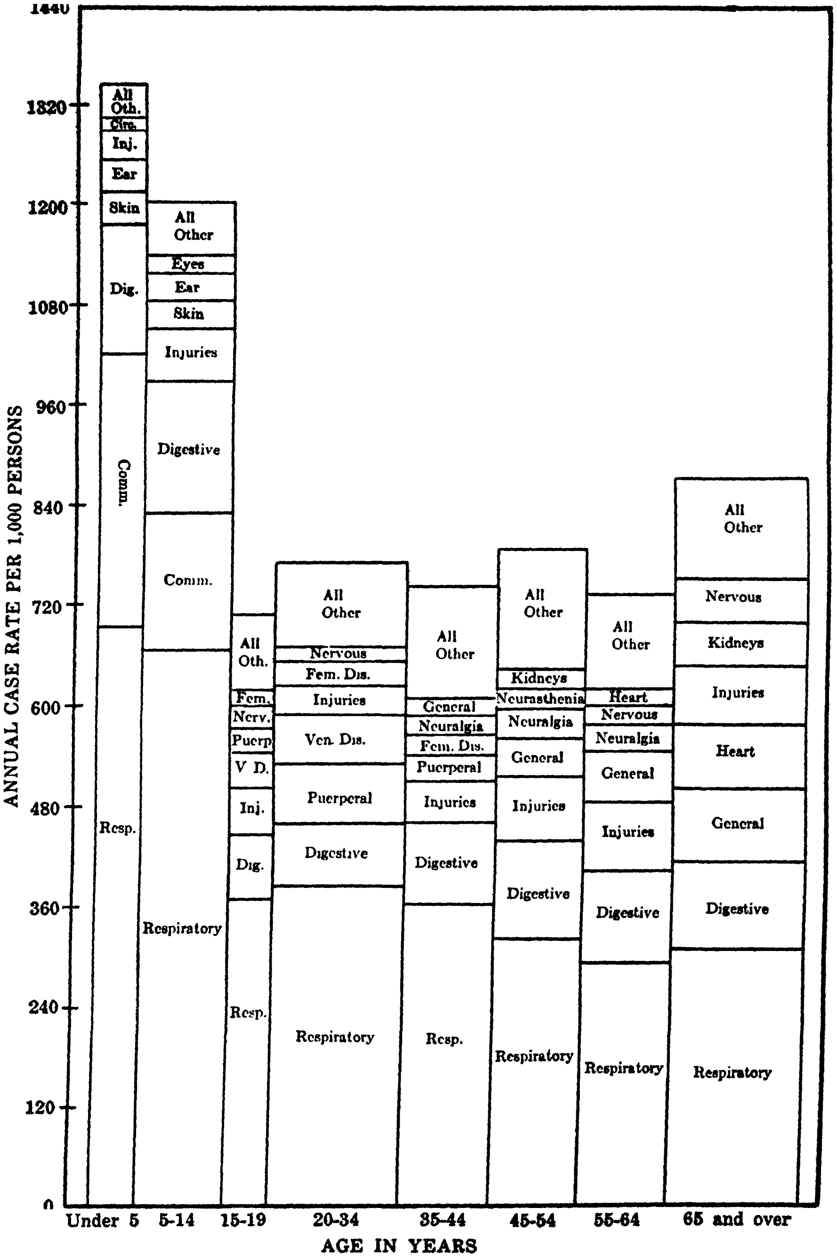

FIG. 8. THE PRINCIPAL CAUSES OF ILLNESS AT SPECIFIC AGES OF LIFE

Computed from various studies of the incidence of illness.
(See Bottom of p. 35 for Explanatory Notes)

older adults, the diseases of the heart and kidneys and the general (presumably non-infectious) diseases (cancer, rheumatism, diabetes, etc.) become prominent.

VARIATIONS IN THE FREQUENCY OF ILLNESS

The incidence of illness varies not only with age but also with sex, occupation, season of the year, and with many other factors.

Seasonal Variations.—During December, January, and February the frequency of illness is nearly twice as great as in June and July.[*] This difference is due to the seasonality of the respiratory diseases; most other causes vary relatively little with season, and digestive and skin conditions tend to show greatest frequency in the summer rather than in the winter. In the few southern states which were included in the Committee's study of incidence, the seasonal curve of illness shows a higher peak in December than in the later months of the winter; in northern states the maximum rates occur in January and February. Other things being equal, the need for medical care may be twice as great in the winter as in the summer months.

Racial Differences in Morbidity.—No comprehensive records are available on the comparative incidence of morbidity among white, colored, and other racial groups in the United States. There is sufficient evidence, however, to indicate that the data accumulated in the Committee's study underestimate the true extent of morbidity because the records are restricted to the experiences of white persons. In 1930, negroes constituted 9.7 per cent of the population; and these people have health and sickness problems which are, on the whole, more serious than those of the whites. Although negroes have lower death rates than whites for a few diseases, rates double or more than

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(EXPLANATORY NOTES TO FIG. 8 ON P. 34)

Circ. includes circulatory diseases except heart disease, arteriosclerosis and high blood pressure;

Nervous includes nervous and mental conditions except neuralgia and the like and neurasthenia and nervous exhaustion;

General includes general diseases other than the communicable and infectious diseases;

Heart includes diseases of the heart, arteriosclerosis and high blood pressure.

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[*] Based on data reported in Publication No. 26, listed at the end of this volume.

double the rates of whites are recorded for tuberculosis, organic heart disease, acute and chronic nephritis, cerebral hemorrhage, pneumonia, typhoid fever, whooping cough, bronchitis, puerperal conditions, influenza, malaria, and pellagra.* And not only death rates, but also morbidity rates are higher for many diseases.† Although it cannot be expressed quantitatively, it can be said that the need for medical care is in general greater among negroes than among white persons.

Variations With Age.—Fig. 9 shows the age curve of illness as indicated by the data from nearly 9,000 white families surveyed for twelve consecutive months in 18 states ‡ and by the families covered in the Hagerstown study.§ The Hagerstown rates are almost consistently higher than the rates in the Committee's study, but an examination of the causes of illness indicates that the difference is due almost entirely to higher rates for the respiratory diseases. In fact, the rates for most of the non-respiratory groups are slightly higher in the Committee data than in the Hagerstown survey.‖

There are minor differences in the shape of the age curves for the two studies. In Hagerstown the morbidity rate for children under 5 was only slightly above that for children 5 to 9 years of age; in the Committee's study the rate under 5 years is definitely higher than that for children 5 to 9 years of age. In both studies, the illness rate is very high in the first years of life and declines markedly in the late school and early adult ages; the minimum is found among persons 15 to 19 years in the Committee's study, and among those 20 to 24 years of age in the Hagerstown survey. After passing the minimum, the morbidity curve rises gradually as age increases, but the Committee data show a small secondary peak at ages 25 to 34, which is not apparent in the Hagerstown data.

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* Louis I. Dublin, *Annals of the American Academy of Political and Social Science*, November, 1928.

† *Cf.*, for example, Thomas Parran, Jr., *American Journal of Public Health*, 1932, Vol. 22, p. 141-156; James A. Crabtree and E. L. Bishop, *ibid.*, p. 157-164; Lucile Robey and I. S. Falk, *Journal of Preventive Medicine*, 1928, Vol. II, p. 79-104.

‡ Based on data reported in Publication No. 26, listed at the end of this volume.

§ Edgar Sydenstricker, eleven papers in the Public Health Reports, 1926-1929.

‖ The period covered by the Hagerstown study included two minor influenza epidemics. Although the 1928-1929 epidemic is included in the period of observation for some of the families in the Committee's study, only a small percentage of the families were under observation in December and January of 1928-1929, and the excess in respiratory conditions due to the epidemic is relatively small for the entire surveyed population. Furthermore, the Hagerstown rates, though expressed on an annual basis, are computed from records for a survey period of 28 months which includes three winters and two summers; the Committee rates are computed from twelve months' records. It is therefore not surprising that the incidence of respiratory disease appears to be higher in the Hagerstown than in the Committee data.

Differences Between the Sexes.—In both of the studies cited, the morbidity differences between the sexes are negligible in the first 15 years, but beyond this age the rates for females are consistently and definitely higher than those for males. In this connection it must be remembered that in a house-to-house canvass of families the informant is nearly always an adult female member of the household who probably remembers her own minor illnesses better than those of other members

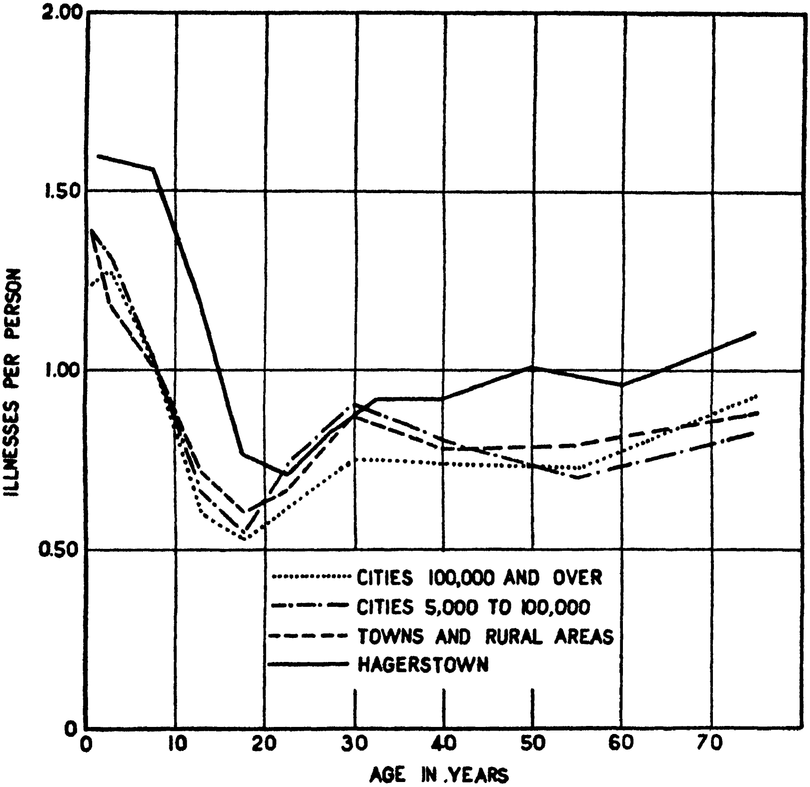

FIG. 9. THE AGE CURVE OF ILLNESS AMONG SURVEYED FAMILIES IN 18 STATES

The findings of the survey made in Hagerstown (population 30,000) are included for comparison.

of the household. In the Hagerstown study a special tabulation was made to obtain illness rates for males and females reported upon by some other member of the household. But this analysis indicated that even with correction for this factor the illness rate for females is in excess of the rate for males, though the difference is less than appears in the uncorrected rates. For the Committee's study the age curves of illness for males and females are shown in Fig. 10.

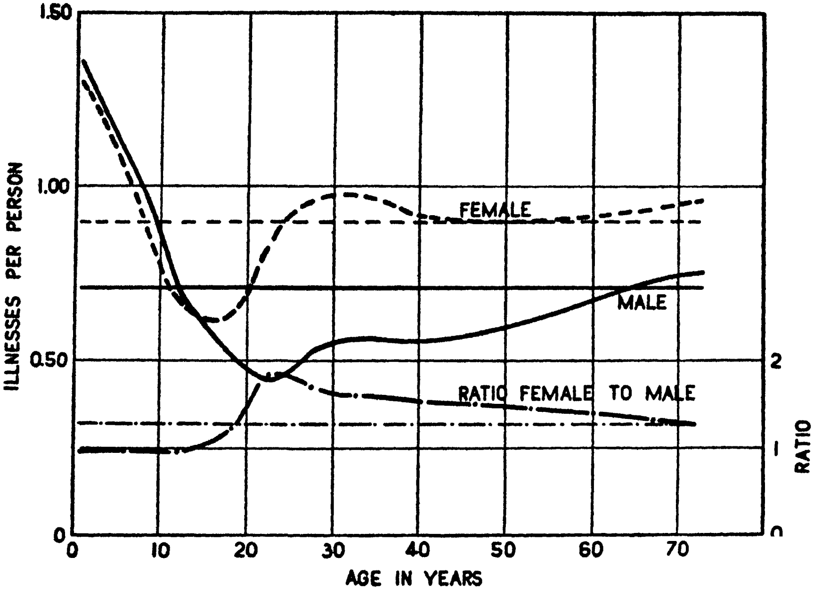

FIG. 10. THE AGE CURVES OF ILLNESS FOR MALES AND FEMALES

The annual number of illnesses per person of specified age at the beginning of the survey year and the ratio of the female to the male rate in each age. The age curves may be contrasted with the lines which show the rates or the ratio for all ages combined.

Occupational Variations.—Industry superimposes on a normal population the special environment and hazards associated with the conditions surrounding occupation. Obviously these vary greatly from industry to industry and for this reason the morbidity, disability, and mortality among persons engaged in different industries vary considerably. As a result of this variation the amount of medical care required for persons in industry varies between wide limits.

In some industries grave accident hazards are responsible for many fatalities. In the United States the accident risk is especially great among linemen and cable splicers in the electric light and power industries, oil and gas-field rig builders and handlers of explosives, skilled underground coal miners, and underground iron-mine operatives, as is adequately evidenced by the high mortality rates in these occupations.* In the Wilkes-Barre coal field, during the period 1906-1925, almost 40 per cent of the deaths among miners from 15 to 65 years of age were due to accidents, as contrasted with approximately 10 per cent among the non-miners of these ages.†

The frequency of industrial accidents which cause temporary disability varies from industry to industry. An index of the variation in temporary and permanent disability is reflected in the widely different insurance rates charged for compensation insurance in the major industries.

Industry is highly selective as to both the physical and mental attainments of those whom it employs. For example, one rarely finds an underweight, underdeveloped person engaged in the heavy tasks of metal smelting and refining; persons who cannot cope with severe physical exertion as a rule find employment in sedentary occupations. Professional, semi-professional, and skilled persons usually are employed at tasks where mental attainments and skill are of first importance. This selective action results in placing persons of a lower social and economic status in the industries which involve heavy labor and which are associated with more serious accident and health hazards. Hence, the relatively high mortality rates in industry commonly occur among persons of comparatively low social and economic status. A statistical demonstration of this correlation has been presented in the Registrar-General's Report of England and Wales for the year 1921.‡ Data of American life insurance companies show the same variation in rates according to socio-economic class. In Table 7 it will be observed that semi-skilled and unskilled workers have higher mortality rates than do the professional and skilled workers.* The unfavorable mortality among laborers is a striking feature of life insurance records. Among them, accidents appear significantly high in the list as a responsible cause. Tuberculosis is most prevalent among those working indoors, in steel mills and foundries, whereas the mortality from this cause is about normal among the laborers on railroad sections and on city streets.

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* Rollo H. Britten, "Occupational Mortality as Indicated in Life-Insurance Records for the Years 1915-1926," *Public Health Reports*, Vol. 45, No. 22, May 30, 1930.

† Dean K. Brundage, *et al.*, "The Health of Workers in Dusty Trades; Exposure to Carbon Dust (Coal Mining Industry)," *Public Health Bulletin*, in preparation.

‡ *The Registrar-General's Decennial Supplement, England and Wales, 1921* (London, 1927), Part II, p. x.

TABLE 7

DEATH RATES FROM ALL CAUSES, EXCLUSIVE OF ACCIDENTS(a)

Adjusted for Age and Number of Years Policy Had Been in Force; by Occupational Classes

Occupational Class	Death Rate per 1,000
Professional and semi-professional	3.27
Skilled	3.67
Semi-skilled	4.53
Unskilled(b)	4.77

(a) Accidents were deducted on an actual, not on an adjusted basis.
(b) Exclusive of farm laborers.

Pneumonia is above the average in every group. The only other cause of death with significant excess mortality associated with an occupation class (among the section hands) is heart disease.†

Concerning actual differences in mortality rates for various socio-economic classes, considered with respect to cause of death, the following may be cited:

> "The greatest differences in the total mortality rates for various social groups, it will be recalled, were found when the mortality of males insured in the industrial department of the Metropolitan Life Insurance Company was compared with that of males insured in the ordinary department of the same company. This condition is shown with particular clearness in relation to the principal causes of death in these two classes. White males 15 years of age and over insured in the industrial department suffered from higher death rates for every cause of death than did males insured in the ordinary department. The death rates for tuberculosis, age period for age period, are from two and one-half to nearly four times as high among the industrial workers as among the professional, mercantile, and agricultural group. Pneumonia is more than twice

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* Rollo H. Britten, *op. cit.*

† *Joint Occupation Study: 1928* (compiled and published by the Actuarial Society of America and the Association of Life Insurance Medical Directors, New York, 1929), p. 52.

as prevalent among industrial as among non-industrial workers. In like manner, the degenerative diseases such as cerebral hemorrhage, nephritis, and organic diseases of the heart show death rates that are two, and in some cases more than three, times as high as in the non-industrial group. The increased accident hazard is important, the death rate of wage-earners being more than twice that of non-industrial workers."*

It is interesting to note the effects of various occupations (with their special environments) on the health of the worker as expressed by the death rates in certain selected cases. If we consider pulmonary tuberculosis, the occupations yielding the highest rates are underground miners (excluding coal), pottery workers, and stone cutters. In all three of these occupations the inhalation of large quantities of dust undoubtedly constitutes an etiological agent in some (probably large) degree. The death rates for Barre granite cutters and wet sandstone grinders may be taken as examples of the effects of such dusty occupations. Dust is prevalent in practically all industrial areas to an extent greater than that found in ordinary places of abode. Although it is impossible to present exact figures concerning the effect of dust on the health of all industrial workers, it has been estimated by Hoffman † that 4 million American wage-earners suffer from the effects of the pollution of the workroom air by dusts of various types. In all probability this is a very conservative estimate.

An abnormal frequency of illness from one or more respiratory diseases has also been found among miners of coal, gold, and lead, among granite cutters, cement workers, and in a number of occupations of iron and steel manufacturing.‡

The pneumonia rates are very high among two types of American workmen: iron foundry workers and others exposed to rapid, extreme alterations in the temperature of their environment, and those forced to work in dusty atmospheres such as cordage and hempmill workers, polishers of iron and steel, and underground coal miners.

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* Louis I. Dublin and Robert J. Vane, Jr., "Causes of Death by Occupation." *Bulletin of the Bureau of Labor Statistics,* No. 507 (United States Government Printing Office, Washington, D. C., 1930), p. 9.

† Frederick L. Hoffman, "Mortality from Respiratory Diseases in Dusty Trades," *Bulletin of the Bureau of Labor Statistics,* No. 231 (United States Government Printing Office, Washington, D. C., 1918), p. 12.

‡ "Health of Workers in Dusty Trades," *Public Health Bulletin* Nos. 176 and 187; also *Public Health Bulletin* No. 202, in press.

Common laborers, recruited as they are from the lowest social group, must be considered as bearing the stigmata of this order—a low standard of housing and diet, and the lack of protection of steady employment. They suffer from higher rates of respiratory disease and of accidental death.

American vital statistics do not provide sufficient data for a detailed study of many of our occupations, but those studies which have been made in this country and abroad indicate that the full effect of occupation on health has not yet been completely recognized even by many physicians and health workers.

Urban and Rural Differences.—The Committee's study of illness in 18 states included both urban and rural areas. The rates for all ages, when adjusted for differences in age distribution, were as follows:

Size of Community	Annual Illness Rate per Person
Cities of 100,000 and over	0.79
Cities of 5,000 to 100,000	0.83
Towns with less than 5,000, and rural areas	0.83

The variation in the different areas is negligible. When examined with respect to age (Fig. 9), no consistent differences appear among the rates in the three types of communities. With respect to the shape of the age curve and the age of minimum illness the three groups are identical except for variations that appear to be due to chance. So far as illness rates measure the need for medical care, there are no substantial differences among those who live in large or middle-sized cities or in rural areas.

Variation in Illness Frequency Among Individuals.—An annual illness rate of 1.0 per person might indicate that each individual was ill once during the year or that one-half of the individuals were ill twice during the year and that the other one-half were not ill at all; or that even fewer individuals were ill more frequently and still more were not ill at all. In the Committee's study the average illness rate was slightly less than one illness per person for the year. This does not mean that each person was ill once during the year; the real situation was that nearly one-half (47.1 per cent) of the individuals reported no illness, but one-fifth were ill two or more times during the twelve months, about 7 per cent three or more times, and 2 per cent as often as four times. The actual distribution was as follows:

Number of Illnesses During Twelve Consecutive Months	Per Cent of Persons Having the Specified Number of Illnesses (All Causes)
0	47.1
1	32.2
2	13.6
3	4.8
4	1.6
5 and over	0.7

There is also considerable variation with age in the proportions of individuals who were sick during the year. Among children under 5 years of age, approximately 68 per cent were ill once or more, and only 32 per cent escaped an attack of illness during the year. In the healthy age group 15 to 19 years, the proportions were almost reversed: 41 per cent reported illness and 59 per cent reported no illness during the year. In the three broad age groups from 25 to 64, approximately one-half of the persons were ill during the year and the other half were not ill; but above age 65, 60 per cent were ill one or more times and 40 per cent reported no illness. The percentage of persons who were not ill during the year is shown for males and females in Fig. 11.

It has already been noted in the comments on average illness rates that the incidence of illness is greater among adult females than among adult males. In Fig. 11 this relation appears as a higher percentage of adult males than of adult females who reported no illness during the year. Moreover, among males the maximum point in the curve of the percentage of persons who experienced no illness occurs in the age period 20 to 24 years, whereas among females it occurs in the period 15 to 19 years.

Variation in Amount of Illness Among Families.—Of paramount importance to the individual family which must meet the problems of illness is the variation in the illness rate from family to family. Table 8 shows the percentage of families which had no illness during a twelve-month period * and the percentage which had four or more, six or more, and nine or more illnesses during a year. The families have been classified according to size, and, to indicate more clearly the financial problem which sickness and medical care may entail, they have also been classified according to the total family income.

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* From Publication No. 26, listed at the end of this volume.

Among families of all sizes and all incomes, at one extreme 8 per cent had no illness; but at the other extreme 7 per cent had nine or more illnesses during the year. Of the families with only two persons, 18 per cent experienced no illness during the year, 4 per cent had six or more illnesses, and only 0.4 per cent suffered nine or more cases. Most of these small families might have been able to meet their burden of sickness without undue inconvenience, but among the unusually large families with eight or more persons each, there were nearly two-fifths (39 per cent) which had six or more illnesses, and

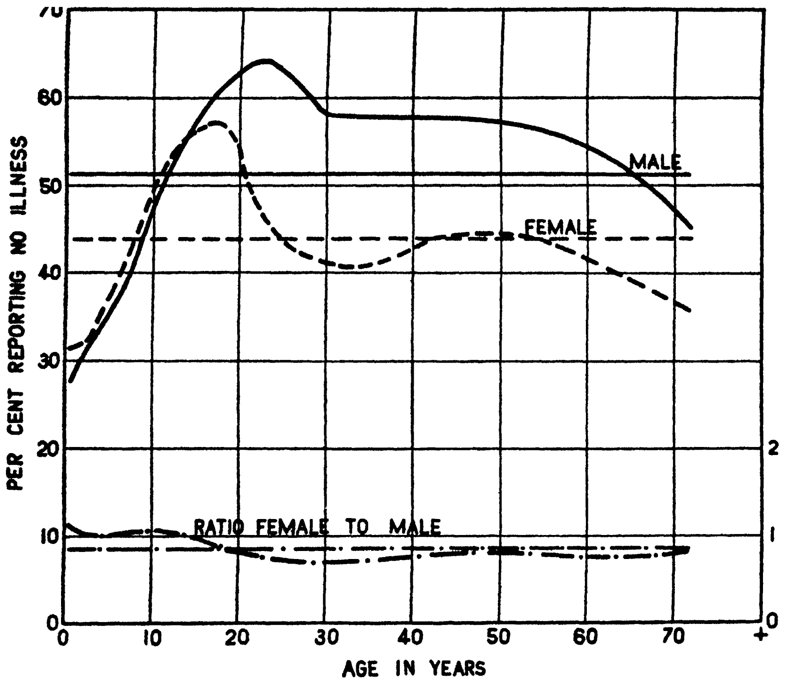

FIG. 11. THE AGE CURVES OF "GOOD HEALTH"

Percentage of males and percentage of females of each specified age at the beginning of the survey year who were without reported illness and the ratio of the female to the male percentage in each age. The age curves and the ratio curve may be contrasted with the lines which show the rates or the ratio for all ages combined.

TABLE 8

VARIATIONS IN THE AMOUNT OF ILLNESS PER FAMILY

Percentage of Families Having the Specified Number of Cases of Illness per Year, According to Size of Family and Income, Based on Data for 8,639 White Families, Surveyed for Twelve Consecutive Months, 1928-1931

Size of Family	0	4+	6+	9+	0	4+	6+	9+	0	4+	6+	9+
	All Incomes				Under $1,200				$1,200-$2,000			
All sizes	8.2	44.0	21.6	6.7	8.1	41.7	21.5	6.7	8.4	42.7	20.4	6.1
2	18.4	17.3	4.4	0.4	17.7	18.8	6.1	0.8	18.7	13.3	3.2	0.6
3	8.9	34.6	13.2	2.3	6.5	26.6	14.9	3.3	9.5	29.5	10.4	1.4
4	6.5	46.2	22.0	5.9	6.3	42.4	22.4	5.5	7.5	46.9	21.1	5.5
5	7.1	51.4	27.0	8.4	9.2	46.7	24.1	7.7	6.5	49.7	23.1	6.2
6, 7	4.8	56.7	32.3	13.3	4.0	53.0	29.1	10.4	5.0	55.0	33.2	12.5
8+	3.6	64.4	38.9	15.1	2.6	63.8	40.8	17.1	4.8	63.6	34.9	13.9
	$2,000-$3,000				$3,000-$5,000				$5,000 and Over			
All sizes	9.0	42.4	21.5	5.7	7.1	46.7	21.1	7.0	7.1	50.3	25.6	10.1
2	19.5	18.4	3.5	0.0	16.1	20.3	4.2	0.0	19.2	18.4	4.8	0.0
3	10.8	32.3	12.9	2.4	8.1	42.7	16.5	2.2	6.3	43.1	15.2	3.4
4	6.8	42.2	20.7	4.9	4.8	49.1	22.3	6.5	5.6	51.6	25.8	8.5
5	8.5	49.6	28.0	6.5	6.9	52.2	26.2	10.4	4.3	63.0	38.5	16.3
6, 7	5.0	58.7	33.3	12.6	4.8	57.4	28.2	15.4	5.4	64.6	38.5	21.6
8+	3.8	63.1	40.6	12.8	1.9	63.0	38.9	11.1	3.4	79.3	48.2	31.1

15 per cent had nine or more illnesses during the twelve-month period. For them the financial burden of sickness and medical care is enormous.

The percentages cited for families of all incomes give a fair picture of the situation in each income level shown in the table, except that among the very large families with the higher incomes a higher percentage report many illnesses. The problem raised by nine or more illnesses in a family with a total income of less than $1,200 is vastly greater than in a family with an income of $5,000 or more. More than one-fifth of the families with incomes of less than $1,200 had six or more illnesses per year, and 7 per cent of them had nine or more attacks. In the same income group, 17 per cent of the families, each with eight or more persons, had nine or more illnesses during the year. This situation as a whole may be presumed to occur year after year, although it does not mean that the same family has a high sickness record one year after another. It does mean that every year an appreciable proportion of all families has a very large sickness experience. For a thousand families the incidence of illness and the need for medical care may be predictable; but for the individual family both are uncertain.

THE INCIDENCE OF ILLNESS AS REVEALED BY STATISTICS ON PHYSICAL IMPAIRMENTS AND DEFECTS

Theoretically, an accurate index of the health of the population and the need for certain kinds of medical attention should be provided by records of physical examinations. Unfortunately, the data yielded by such examinations are usually unsatisfactory. The chief difficulty lies in the fact that specific physical impairments have not been precisely defined; hence the standards of different examining physicians are seldom the same. The results of such studies as have been made represent merely the individual professional opinions of American physicians, and sometimes the opinions vary so widely as to yield statistical data of little meaning. Admitting that the records on the extent of specific physical impairments in the population do not completely disclose the facts, one may nevertheless find in these studies certain valuable information about the frequency of occurrence of the principal impairments, and especially an indication of the percentage of persons with various physical defects.

Defects Among Children Under Two Years of Age.—The smallest available body of data is for children under two years of age. The United States Children's Bureau has published the findings from the physical examination of 994 children under two years of age in Gary, Indiana, in 1918.* In this age group the physical impairments and diseases most frequently encountered are summarized in Table 9.

TABLE 9

PREVALENCE OF PHYSICAL IMPAIRMENTS OR DISEASES

The Conditions Most Frequently Encountered Among 994 Children Under Two Years of Age, Given Physical Examination in Gary, Indiana, 1918

Defects Arrayed According to Size of the Male Rate	Percentage of Children Examined	
	Boys	Girls
1. Prepucial defects	70.8	....
2. Underweight (10 per cent and over)	29.0	23.4
3. Defective tonsils	19.3	17.2
4. Bow-legs	13.7	10.4
5. Distended abdomen	10.7	13.8
6. Open fontanel (children 1½ to 2 years of age)	4.8	5.1
7. Enlarged or greatly enlarged glands	4.4	3.2
8. Hernia	3.6	4.0
9. Adenoids (suspected)	3.2	3.0
10. Adenoids (definite)	3.2	1.1
11. Abnormal shape of head	3.1	1.9
12. Anemia	2.5	1.9
13. Decayed teeth	1.9	1.3
14. Strabismus	1.5	1.1
15. Harrison's groove	1.5	0.4

The impairment rates were, in general, somewhat higher among the male than among the female children under two years of age.

Children Aged Two to Seven.—In the Gary study, 3,125 children of ages two to seven were given physical examinations. More defects were uncovered among these older preschool children. Some of the findings suggest that the standards may have been too rigid to allow for normal variations, and there seems to be some confusion with esthetic considerations, especially with regard to certain so-called defects of the bony and muscular systems. Nevertheless, the prevalence rates of defects and pathologic conditions shown in Table 10 are not without some value in affording an impression of medical practitioners' findings for a group of preschool children.

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* Anna E. Rude, *Physical Status of Preschool Children in Gary, Indiana* (United States Government Printing Office, Washington, D. C., 1922), p. 76.

TABLE 10

PREVALENCE OF PHYSICAL IMPAIRMENTS OR DISEASES

The Conditions Most Frequently Encountered Among 3,125 Children, 2 to 7 Years of Age, Given Physical Examination in Gary, Indiana, 1918

Defects Arrayed According to Size of the Male Rate	Percentage of Children Examined	
	Boys	Girls
1. Decayed teeth	64.8	64.6
2. Defective tonsils	53.8	50.3
3. Prepucial defects	46.2	....
4. Mouth breathing	43.1	35.8
5. Nasal obstruction	41.9	34.6
6. Adenoids (definite)	36.7	30.6
7. Vision defective	35.6(a)	36.6(a)
8. High-arch palate	34.4	31.3
9. Enlarged or greatly enlarged submaxillary glands	24.6	20.4
10. Winged scapulæ	15.3	13.6
11. Distended abdomen	13.8	13.3
12. Bow-legs	12.4	6.8
13. Malocclusion	10.5	11.5
14. Nasal discharge	10.1	9.0
15. Retracted ear drums	9.5(b)	7.0(b)
16. Enlarged epiphyses	9.4	4.0
17. Enlarged or greatly enlarged cervical glands	9.2	6.2
18. Underweight (10 per cent and over)	9.0	10.4
19. Eye diseases and defects other than of vision	8.2	7.5
20. Anemia	7.3	8.3
21. Harrison's groove	7.2	4.0
22. Adenoids (suspected)	6.8	6.4
23. Abnormal shape of head	6.6	3.1
24. Scars on skin	6.2	4.3
25. Knock-knees	5.9	6.5
26. Round shoulders	4.0	2.6
27. Gum abscess	3.4	3.1
28. Eczema	3.2	2.0
29. Questionable heart disease	2.5	2.9
30. Enlarged or greatly enlarged inguinal glands	2.4	0.8

(a) Percentage based on 2,044 cases tested, 998 boys and 1,046 girls.
(b) A minimum statement; not all children were examined for this defect.

In 23 of the 30 defects listed above, the rates for boys were somewhat higher than for girls. The higher male rates may be noted particularly in defects of the nasopharynx and of certain glands.

Defects Among School Children.—A much larger number of organized medical examinations of school children have been made than of preschool children. The largest collection of records yet published is that of the United States Public Health Service, covering nine groups in different parts of the country, with a total in excess of 30,000 school children. In this study, all examinations were made by medical officers of the Public Health Service, and a certain degree of success appears to have been achieved in coping with the problem of using comparable diagnostic standards. In obtaining an approximation of the percentage of children with a specific defect, the rates were computed for each locality-examiner group, and were averaged for the several groups which showed a tendency toward agreement as to age prevalence, and some agreement as to actual rate. Fig. 12 shows the relative frequency of the defects and conditions found among school children of both sexes.*

Interesting differences in the prevalence rates of specific physical defects according to sex were found in the Public Health Service study. The presence of simple goiter among school girls was about six times as frequent as among school boys. The pediculosis rate among girls was more than twice the rate among boys. Although certain conditions were found to be slightly more prevalent among girls than boys, considerably more than one-half of the defects shown in the chart were more prevalent among boys, these categories including defective hearing, enlarged anterior cervical glands, adenoids, mouth breathing, deviated septum, gingivitis, enlarged submaxillary glands, and defective speech.

Defects Among Adults.—Perhaps the best data thus far available on the prevalence of specific impairments among adults (certainly the largest mass of records, for they cover more than 100,000 persons) devolve from the "health" examinations made by approximtaely 9,000 physicians in differ-

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* Selwyn D. Collins, "The Health of the School Child," *Public Health Bulletin* No. 200 (United States Government Printing Office, Washington, D. C., 1931), p. 55.

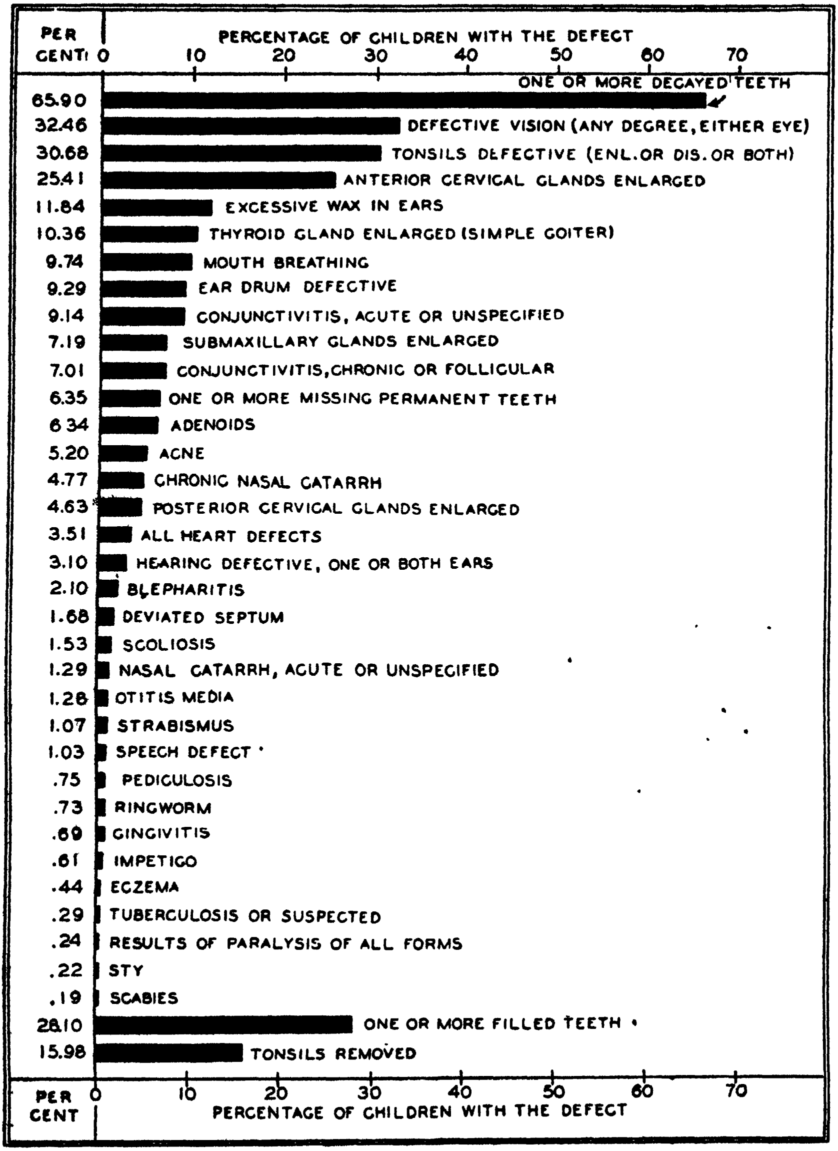

FIG. 12. AVERAGE PREVALENCE OF CERTAIN PHYSICAL DEFECTS AND DISEASES (ALL DEGREES OF SEVERITY)

As found on physical examination of several groups of white school children of all ages by medical officers of the United States Public Health Service. (From Selwyn D. Collins.)

ent localities of the United States working under the auspices of the Life Extension Institute. The persons examined were life-insurance policyholders, and were a selected group because they had passed some sort of medical examination in order to obtain policies and because persons in the lower social and economic levels were inadequately represented. Since the examining physicians were in the main not specially trained in the technique of discovering impairments, the previously mentioned difficulties from the lack of precise standards are again encountered. The impairments most frequently found among these adult males are shown in Fig. 13. The rates have been adjusted to the age distribution of adult males in the United States (1920 census) so as to reflect more closely the rate of impairments in the general population rather than in the sample group of 100,000.*

More recently there has been published an analysis of approximately 12,000 medical examinations of women by the Life Extension Institute.† Happily, the age distribution of the women examined was found to be almost identical with that of the men so that the impairment rates for each sex can be compared without regard to age. The greatest excess of female over male rates was related to thyroid conditions, namely, enlarged thyroid (simple goiter), hypothyroidism, and dysfunction of thyroid (toxic goiter). Several other findings reflect a difference in regard to the nervous system; for instance, the rates are higher among women for insomnia, neuritis, nervousness, and abnormal reflexes (exaggerated, sluggish, unequal, or absent). Other impairments which were definitely more prevalent among women include varicose veins, hemorrhoids, valvular heart lesions, and enlargement of the heart. Apparently the rates of physical impairment are, on the average, higher among women than among men.

For a few types of physical defects the male rates were definitely in excess of the female. It appears surprising, however, that these were so few in view of the fact that the mortality rates for men at a given age are definitely higher than those for women. Aside from the findings from urinalyses,

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* See article by Edgar Sydenstricker and Rollo H. Britten in *American Journal of Hygiene*, Vol. 11, No. 1, January, 1930.

† Rollo H. Britten, "Sex Differences in the Physical Impairments of Adult Life," *American Journal of Hygiene*, Vol. 13, No. 3, May, 1931, p. 741-770.

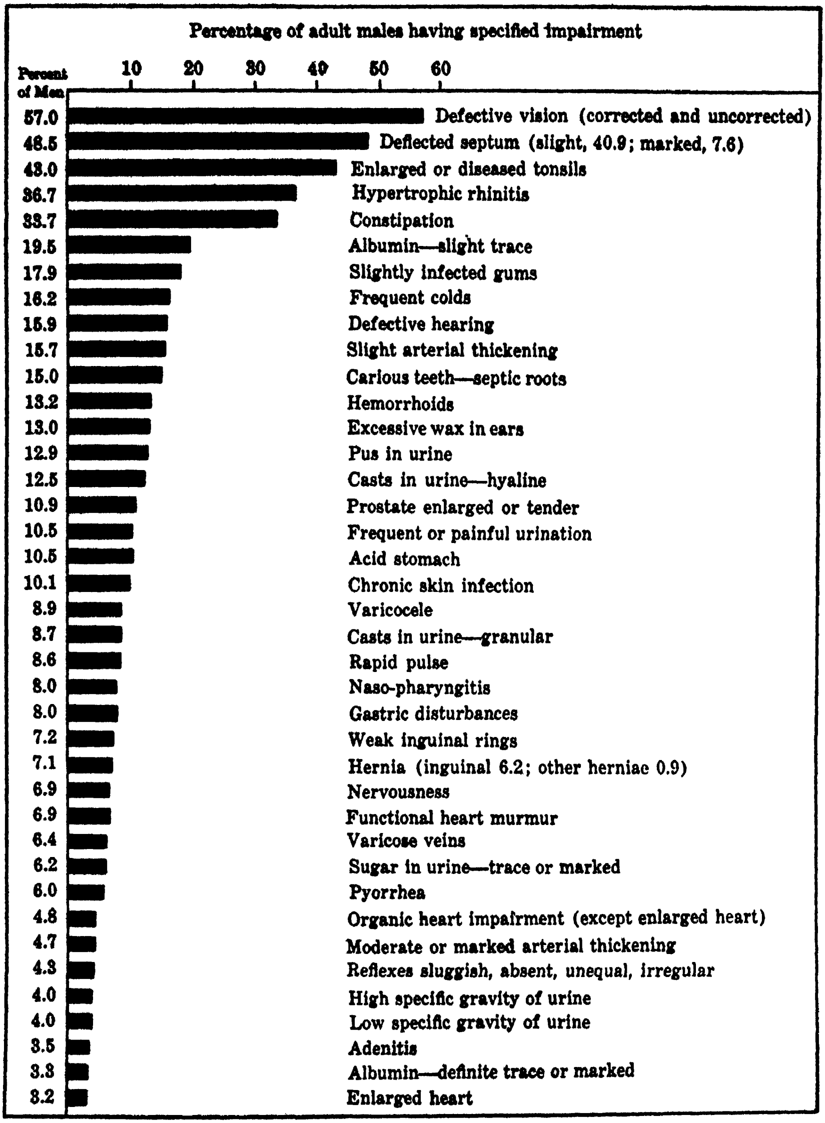

FIG. 13. FREQUENCY OF CERTAIN IMPAIRMENTS FOUND UPON EXAMINATION OF ADULT MEN

The rates have been adjusted to the age distribution of adult males in the United States.

which are difficult to interpret, the only conditions in which a definite excess was found in the rate for men are defective hearing, inguinal hernia, arterial thickening, pyorrhea, deflected septum, and frequent colds. The male excess in the frequency of certain nose and throat conditions is of particular interest because among children a similar sex difference in the incidence of these conditions was found.

Mental Defects.—Because of the wide differences in estimates of the prevalence of mental defects, no discussion of them is attempted here. Their importance, however, is demontrated in the statistics of admissions to institutions and hospitals for mental diseases in New York State which reveal the startling fact that nearly 5 per cent of the babies born in that state, and undoubtedly in other states as well, have the prospect of becoming mentally diseased later in life to such a degree as to require institutional care.

Summary.—The data on the incidence of physical (and mental) defects have been presented almost without comment. Despite shortcomings in the records, the extensive prevalence of physical defects is so clearly evident in the tabulations that it seems gratuitous to call specific attention to the fact. Sickness surveys show that certain proportions of the population experience a year of life without illness. Indeed, the age curve for persons without illness is sometimes designated the "age curve of good health." But with the records of physical defects and impairments before us it seems more probable that this age curve is a composite of the "age curve of good health" and the "age curve of neglected health." Good health is a relative term; but it is improbable that anyone is entirely in good health. It seems more likely from the data presented above that the need for some medical care is almost universal.

THE INCIDENCE OF ILLNESSES OF VARIOUS DEGREES OF SEVERITY

If the incidence of illness is to provide a useful index to the need for medical care, it is essential to consider the severity, in addition to the incidence, of illness. The rates thus far considered in connection with the Committee's study among 9,000 families in 18 states included all reported illnesses. An illness rate, particularly with respect to the minor respiratory diseases, varies considerably with the frequency with which an investigator visits the families to obtain the record. When visits are made to the families every four or five days with the specific purpose of discovering minor respiratory illness, survey records yield a rate of three to five colds per person in the course of a year; but when visits are made as infrequently as once in two or three months, the respiratory rate is found to be less than one-half a cold per person, because many of the minor non-disabling cases occur and are forgotten between visits. The same thing must be true to some extent of the minor digestive and of other minor disturbances. In a survey such as that which the Committee has made, obviously the reports are not complete for the minor non-disabling conditions; but it seems probable that they are fairly complete for cases that caused the patient to lose time from school or work, or to go to bed, or to see a physician. It is therefore profitable to examine the illness rates for various types of cases classified according to the severity of the disease.

Considering all classes combined, there were 844.5 illnesses per 1,000 persons.* Of the cases that caused the patient to go to bed for one or more days there were 434.4 per 1,000 persons surveyed; of the cases hospitalized † there were 60.1 per 1,000 persons surveyed. As classification proceeds (in order of increasing severity) from all reported non-disabling conditions to the cases which terminated in death, it may be anticipated that the distribution according to cause will be very different. Since the total rates for the several classes vary so greatly, the best means of comparing causes seems to be the computation of proportions of the total cases in a given severity class which were due to each particular cause. These proportions are shown in detail in Appendix Table 2-A; and in Fig. 14 they are shown graphically for the seven more or less specific conditions which occur most frequently in each specified category. It should be stressed that these proportions are based solely upon the *frequency* of the diagnosis. Even when cases are limited to those of sufficient severity to cause the patient to go to bed, wide differences in severity still occur—as, for example, in the average time in bed.

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* This rate does not include medical experiences not accompanied by illness.

† Hospitalized for one full day or more, each.

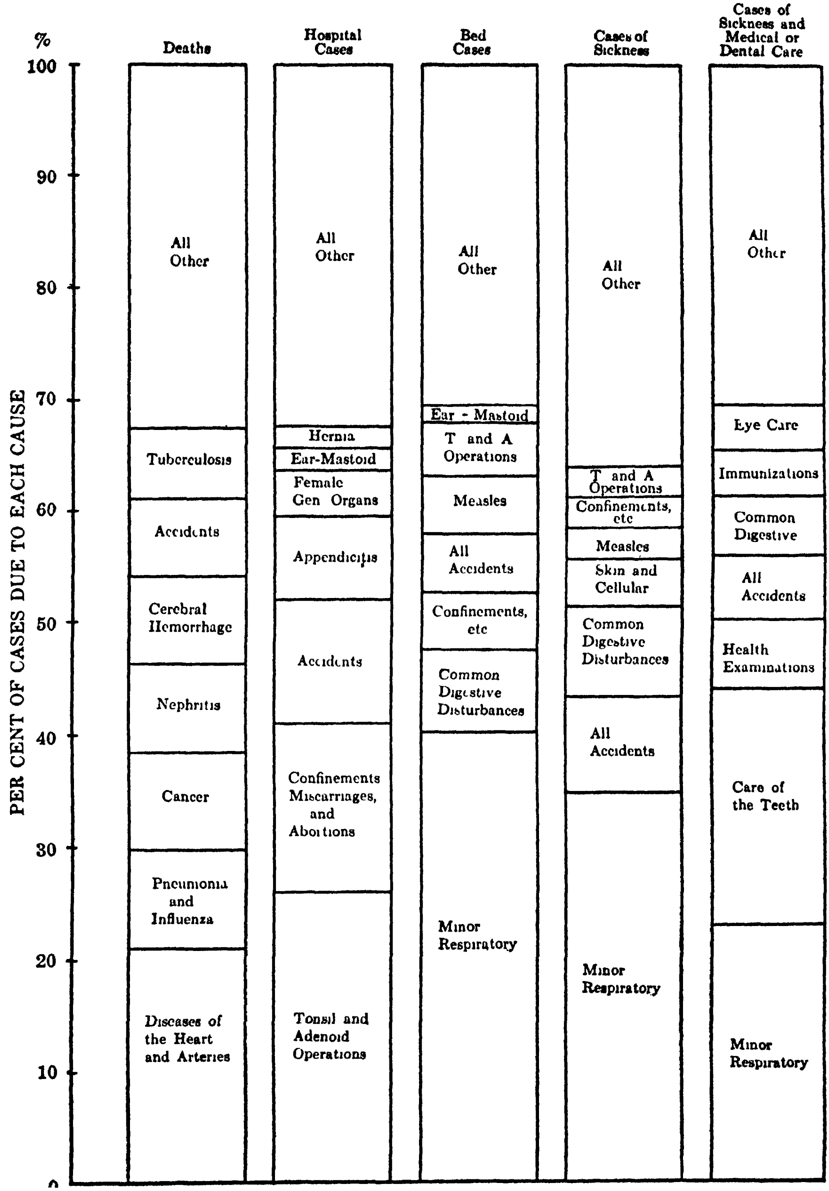

FIG. 14. PRINCIPAL CAUSES OF ILLNESS ACCORDING TO SEVERITY

The bar at the extreme right includes all cases of sickness and of medical or dental care whether or not associated with illness. The bar at the extreme left includes deaths. The progression from right to left is in the order of increasing severity.

Considering all cases of illness and medical or dental care for therapeutic or preventive purposes (the column at the extreme right in Fig. 14), three diagnosis groups appear to make up one-half of all cases; minor respiratory conditions, 23.2 per cent; care of the teeth, 20.7 per cent; and health examinations, 6.3 per cent. Within the seven most frequent diagnostic categories are also included immunizations, and care of the eyes which are largely refractions without any specific symptoms that would ordinarily indicate illness.

When the preventive services and dental and eye care that were not accompanied by illness are excluded from the total (second column from the right in Fig. 14), the minor respiratory diseases account for an even larger proportion of the cases (34.1 per cent), and together with accidents (8.5 per cent), and the minor digestive disturbances (7.3 per cent), make up one-half of the total cases.

Considering only cases which caused the patient to go to bed, the minor respiratory diseases, contrary to what might be inferred from the designation, constitute a larger proportion of the total (40.2 per cent) than appeared for all illnesses, and together with the digestive disturbances (7.0 per cent) and confinements (5.4 per cent) make up more than one-half of all bed cases. Other important causes in the bed-care category are accidents, measles, tonsil and adenoid operations, and ear and mastoid diseases.

Hospitalized cases have been set next in order to bed cases on the assumption that hospitalization is generally obtained for illness of greater severity than that which receives only bed care at home. Examination of the important items among the hospital cases suggests, however, that hospitalization is not so much a matter of the severity of the disease as of the nature of the medical need, particularly with respect to conditions which require surgical operations. The most frequent hospital cases are those which are admitted for tonsil and adenoid operations (constituting 25.6 per cent of the total). Together with confinements (15.0 per cent), accidents (11.1 per cent), and appendicitis (7.8 per cent), these constitute nearly 60 per cent of the total hospital case load. It will be noted that all four of these conditions always or commonly involve surgical operations. Of all hospital cases in the Committee's study, 64 per cent are surgical, even when abortions and normal confinements are not counted as surgical cases. Considering the additional specified diagnoses (in Fig. 14) in the group of hospital cases, diseases of the female genital organs, ear and mastoid conditions, and hernia are all frequently accompanied by surgery.

Inasmuch as the number of deaths which occurred among the 8,758 families surveyed by the Committee was not large, the bar at the extreme left in Fig. 14, representing the most frequent causes of mortality, is based on deaths in the Registration Area in 1930 (11.3 per 1,000 persons). (It might be said, however, that the same general picture is shown by the 232 deaths which occurred in the Committee's study.) The major causes of death are in an entirely different sequence from that which appears for any of the severity classes of illness that have been considered. In none of the instances cited have diseases of the heart and arteries appeared as among the seven most frequent, specific, causes of illness; but this category includes the most frequent cause of mortality, constituting 20.7 per cent of all deaths.* Second in importance among the causes of death is the category pneumonia and influenza (9.0 per cent). In this connection it should be remembered that 1930, the year to which the data apply, was particularly free from any widespread influenza epidemic, and the important position of these respiratory diseases among the causes of death is not due to any unusual epidemic prevalence of influenza. The next three most frequent causes of mortality are cancer, nephritis, and cerebral hemorrhage. Of the important causes of death only one category, accidents, appears among the seven most frequent causes of illness in any of the severity groups. Tuberculosis, which is now the seventh most frequent cause of mortality (6.3 per cent of all deaths), was two generations ago the most frequent cause of death; but it does not appear among the seven most frequent causes of illness in any category. The appearance of tuberculosis and the so-called degenerative conditions as important causes of death without counterparts in the illness data indicate a high case fatality for these diseases.

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* Of the total in this group, diseases of the heart constitute 18 8 per cent, and diseases of the arteries add only 1.9 per cent.

Thus, it has become clear that the principal causes of illness are not necessarily the principal causes of death. To be sure, the causes of morbidity which do not appear in the mortality lists may—and in many instances, do—act as contributory causes of death. Nevertheless, there is a gradual but definite shift in the diagnostic groups from those which rank highest among the mildest to those which are prominent among the most severe (the fatal) cases of disease.

Any consideration of the ills of the flesh which medical care is designed to serve must take these statistical findings into account. It is not sufficient that the principal causes of illness are served by physicians, hospitals, and other medical agencies; if medical care is to be wisely and efficiently utilized it must be provided according to the most important, and not merely according to the total, need.

CHAPTER IV

MEDICAL CARE IN HEALTH AND IN SICKNESS *

In all reports of the Committee on the Costs of Medical Care the word "medicine" is used (according to the definition of Webster) as "the science and art dealing with the prevention and cure or alleviation of disease." It therefore includes the private practice of physicians, dentists, nurses, and other individuals, and the work of all types of medical and public health agencies. Likewise, "medical facilities" and similar terms have the same comprehensive meaning. Accordingly, a summary of medical care received by the people in health and in sickness must embrace such preventive services for the community as are provided by official and non-official agencies which operate on national, state, county, municipal, or other scale, and such official and non-official agencies and such private practitioners as provide preventive or diagnostic and therapeutic services for the individual. A general review of medical agencies and the care they provide is conveniently available in an earlier summary published by the Committee.† Hence this chapter is devoted to recently accumulated data on preventive, diagnostic, and therapeutic services provided the family or the individual.‡

Although the discussion which follows relates to a general population, it is recognized that special needs obtain in different race, nativity, and occupation groups. The morbidity and mortality rates discussed in the preceding pages, and estimates of needed medical care which might be based upon them, are averages, and are not necessarily applicable to individuals or to special groups of the population. The medical needs of special groups may differ rather widely from the average for a standard population of 100,000 persons. Thus, in industries in which the accident rate is high, for example in coal mining or in iron and steel manufacturing, the requirements for ade-

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* We are indebted to Selwyn D. Collins of the Office of Statistical Investigations, and Dean K. Brundage of the Office of Industrial Hygiene and Sanitation, United States Public Health Service, for assistance in the accumulation of morbidity data utilized in this chapter.

† See Publication No. 8, listed at the end of this volume.

‡ Based chiefly on Publication No. 26, listed at the end of this volume. This report should be consulted for further details.

quate surgical attention and for medical facilities are much greater than for an equal number of clerical workers. Similarly, in industries using processes which involve serious health hazards so that frequent physical examinations and special watchfulness over the health of workers in the dangerous occupations are necessary, the medical needs (and their costs) may be expected to exceed the average by considerable margins.

Disease problems differ, also, according to race and locality. A venereal disease clinic of a particular size which might operate to capacity among colored persons in a southern community might have few calls for service among an equal number of white persons in such places as Vermont or Utah. On account of their susceptibility to serious diseases of the respiratory system, the colored, and especially those members of the race who live in overcrowded northern industrial centers, have proportionately greater need of medical attention in the winter months than is adequate for the same number of rural whites in virtually any state of the Union.

MEDICAL CARE RECEIVED BY THE FAMILY

Utilizing the data of the Committee's survey among some 9,000 families living in 130 communities in 18 states, Table 11 shows for all income classes combined the proportions of the families which received some service of each major kind. Each

TABLE 11

PER CENT OF FAMILIES RECEIVING CERTAIN MEDICAL SERVICES

Based on Data for 8,758 White Families in Eighteen States During a Twelve-Month Period, 1928-1931

Type of Service	Per Cent of Families
Physician, surgeon, or other specialist	86.1
Surgery	21.2
Hospital care	20.4
Nursing	17.3
Nursing, exclusive of free visiting nursing	9.1
Dentistry	51.4
Drugs and medicines	97.0
Refractions or glasses	13.4
Secondary practitioner or cultist	8.6

family is accredited with having received a specified kind of service even if only one member was served, regardless of the amount of care received.

Eighty-six per cent of the families had the services of a physician, surgeon, or other specialist; that is, in these families a physician was consulted for some illness or physical defect, or some member of the family had a physical examination, an immunization, or other preventive service. Twenty-one per cent of the families had one or more surgical cases and 20 per cent had at least one hospital case in the course of the year. Seventeen per cent of the families had some nursing care, but a considerable proportion of these received only free visiting nursing; only 9 per cent of the families had nursing service other than or in addition to that provided by free visiting nurses. About one-half (51 per cent) of the families had some dental care (including prophylaxis) in the course of the year, and 13 per cent had eye refractions by physicians or optometrists, or bought glasses on an old prescription. Nearly every family had some expenditure for medicine. Indeed, it is surprising that there were as many as 3 per cent who reported no purchases of medicine, even for the family medicine chest, during the course of the year. Only 9 per cent of the families consulted a midwife, a chiropodist, or an osteopath, a chiropractor, or other sectarian practitioner during the year.

The amount of medical care received varies more markedly with economic circumstance than does the incidence of morbidity. This is clearly evident in Fig. 15 which shows in each income group the percentage of the families which received each type of medical service during the year. It may be seen from the chart that the variation with income is much greater for some services than for others. For example, regardless of income level, nearly all the families made some purchase of drugs and medicines during the year. There is a consistent rise with income in the proportion of families which consulted a physician during the year, but the relative variation among the income groups is not very large. In the case of surgery and of hospital care, the proportion of families receiving such service in the highest income group was 150 or 175 per cent of the proportion in the lowest income level. When nursing care of all kinds is considered, the proportion of families with

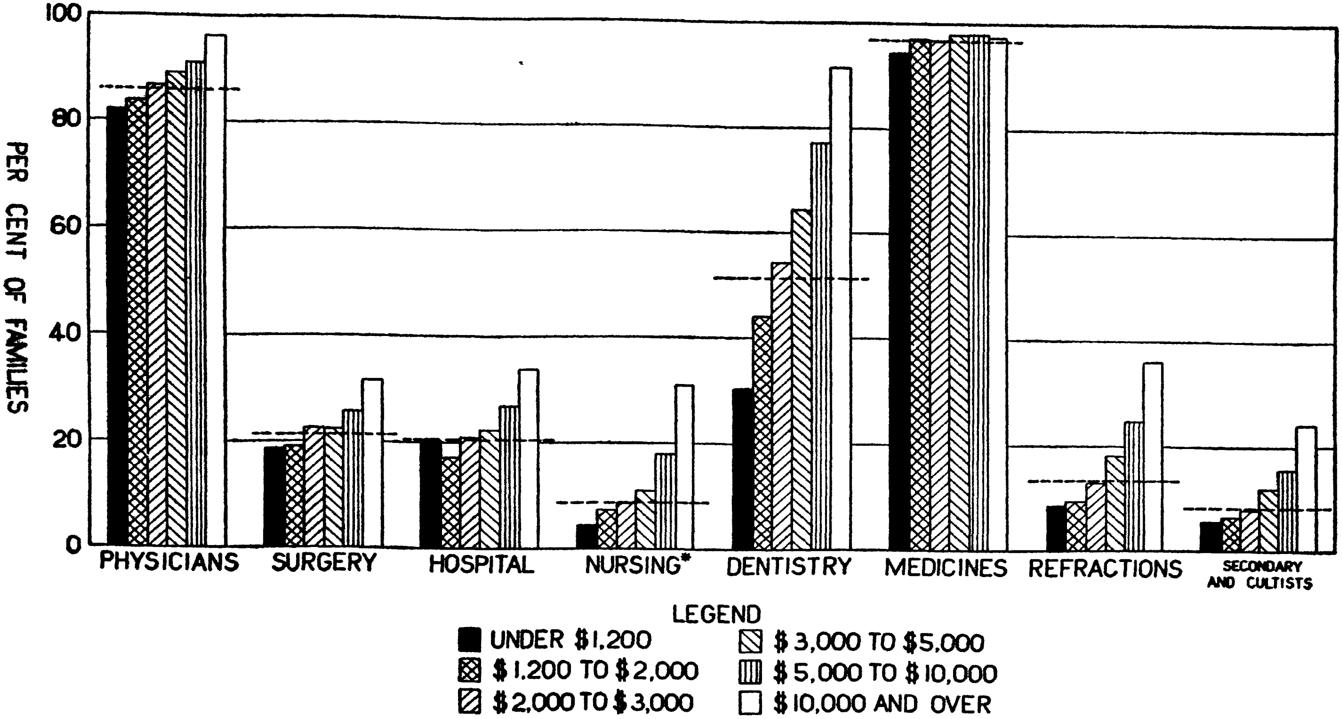

FIG. 15. THE PER CENT OF FAMILIES IN EACH INCOME CLASS WHICH RECEIVE SOME MEDICAL CARE OF EACH SPECIFED TYPE

The broken lines represent for each type of service the average for all income classes combined in the proportions presumed to obtain in the United States.

* Nursing exclusive of free service from visiting nurse associations.

incomes under $1,200 which had nursing care is greater than for any other income group except families with $10,000 and over. A tabulation of nursing care exclusive of that provided by *free* visiting nurses indicates that most of the nursing for the lower income groups was only this free service. When free nursing is excluded, the proportion of families with incomes of $10,000 and over which received nursing care is more than seven times the proportion having such service among the families with $1,200 or less. Similarly, in respect to dentistry and eye refractions there are wide differences in the proportion of families receiving such services, but the relative differences are not so great as in the case of nursing. The proportion of families consulting secondary practitioners (midwives and chiropodists) or cultists (osteopaths, chiropractors, Christian Science healers, etc.) during the year was more than four times as great in the highest as in the lowest income level.

Another and perhaps more accurate method of indicating the utilization of medical service is by measuring the percentage of *individuals* who received certain types of service. Table 12 shows such percentages for all communities combined and for families in large and middle-sized cities and in small towns and rural areas. Although 86 per cent of all the families had the service of a physician during the year, only about one-half (48 per cent) of the individuals had such service. Similarly, about one-half of the families had some dental care, but only 21 per cent of the individuals visited the dentist during the course of the year. Only one person in seventeen had hospital care, one in twenty-six had eye care, and one in nine had health examinations or immunizations. With respect to the size of the community there appears to be no large or consistent difference in the percentage of individuals who receive service from a physician. However, the percentage of individuals receiving hospital care, dental care, and eye refractions appears to be greater in the large cities than in the towns and rural areas.

Eleven per cent of the individuals studied had a complete or partial physical examination (*i. e.*, a health examination) or an immunization against some disease in the course of the year. There were 65.4 complete or partial examinations per 1,000 persons surveyed (see Appendix Table 3-A). Of this total, about two-fifths were school examinations, another two-fifths were other general physical examinations, and the remainder were " check-ups " of certain organs or parts of the body to determine the presence or absence of specific pathologic conditions. The frequency of health examinations varies greatly with income; in the highest income group the rate is about four times the rate in the lowest.

Individuals in families with incomes between $1,200 and $5,000 had fewer immunizations than those in higher or lower economic levels. This peculiar situation seems to be due largely to the incidence of smallpox vaccinations; the receipt of typhoid —and to a lesser extent of diphtheria—immunizations increased in frequency as income increased.

TABLE 12

PER CENT OF INDIVIDUALS WHO RECEIVED CERTAIN MEDICAL SERVICES

Based on Data for 8,758 White Families in Eighteen States During a Twelve-Month Period, 1928-1931

Size of Community	Per Cent of Individuals Who Received the Specified Services During the Year:				
	Physicians' Services (All M.D.)	Hospital Care	Dental Care	Refractions and Glasses	Health Examinations and Immunizations
All communities...	47.9	5.8	21.2	3.8	11.4
Cities of 100,000 or more population.	48.2	7.1	26.7	4.6	9.8
Cities of 5,000 to 100,000 population............	52.0	6.4	22.7	4.0	12.9
Towns under 5,000 population and rural areas......	45.7	4.6	17.1	3.2	11.6

Immunizations were performed at the rate of 58.7 per 1,000 total population. Smallpox vaccinations and diphtheria (toxin-antitoxin) immunizations were the most frequent kinds; and there were more than twice as many smallpox vaccinations as diphtheria immunizations. Typhoid vaccination was third in the list of immunizing procedures, but was far less frequent than the other two mentioned.

For illnesses and for medical cases which were not associated with specific disease the study included a measure of the volume of service received in terms of the number of home and office consultations with physicians. In the course of the year, there was an average of 2.64 consultations per person with physicians in private practice or in clinics. (In addition there was an average of 0.21 calls per person to secondary and sectarian practitioners). Of the total of 2.64 calls per person, slightly less than one-half were calls of the physician to the home and the remainder were consultations with the patient at the office or clinic. The calls to the clinic amounted to only about 10 per cent of the total calls upon physicians or specialists. With respect to family income, for both home and office consultations the number per person increased markedly and consistently with income. As might be expected, the number of clinic calls declines sharply as income increases; there are only about one-eleventh as many in the highest income group as among families with less than $1,200 income. There would probably be even fewer such calls recorded for the high-income groups were it not for the fact that the term clinic here includes private group as well as public clinics.

The increase in the incidence of hospital cases as income increases has already been noted. The only available measure of the volume of hospital service is the number of hospital days per person. For all income groups combined, there was slightly less than one day (0.94) spent in the hospital per person. The number of hospital days per person was approximately the same in the highest and the lowest income levels, with fewer hospital days per person in the intermediate classes.

PREVENTIVE SERVICES FOR THE INDIVIDUAL PROVIDED BY PUBLIC CLINICS AND PRIVATE PRACTITIONERS

With respect to the use of public clinics, preventive and curative medicine show wide differences in the Committee's study. Whereas only 5 per cent of all cases of illness received any treatment from a public clinic, 41 per cent of all immunizations and 53 per cent of all health and check-up examinations were performed in public clinics or other public medical facilities such as the public schools.

Immunizations.—During the year of the study, immunizations amounted to 59 per 1,000 total population (Appendix Table 3-A). In the various income levels the rate ranged from 49 per 1,000 among those with incomes of $1,200 to $2,000 to 120 per 1,000 persons in families with $10,000 or more. The families with incomes of less than $1,200 received more immunizations than those in any other class with incomes below $5,000.

It is somewhat surprising to find a smaller proportion of the immunizations performed by public agencies in the large cities than in the smaller communities (Table 13). In cities with populations over 100,000, public clinics and other public facilities were responsible for only 27 per cent of the immunizations, as against 40 per cent in cities of 5,000 to 100,000 and 53 per cent in towns under 5,000 and rural areas. In other words, the percentage of immunizations performed in public facilities was almost twice as great in small towns and rural areas as in cities over 100,000.

TABLE 13

PER CENT OF IMMUNIZATIONS DONE IN PUBLIC CLINICS AND IN PRIVATE PRACTICE

Immunizations(a) in Surveyed Families in Eighteen States During a Twelve-Month Period, 1928-1931

Family Income	All Communities		Cities Over 100,000		Cities 5,000 to 100,000		Towns Under 5,000 and Rural Areas	
	Per Cent Performed in:							
	Public Clinics	Private Practice	Public Clinics	Private Practice	Public Clinics	Private Practice	Public Clinics	Private Practice
All incomes.....	40.9	59.1	27.3	72.7	39.7	60.3	53.3	46.7
Under $1,200...	70.1	29.9	86.2	13.8	71.9	28.1	64.5	35.5
$1,200- 2,000...	49.2	50.8	32.9	67.1	46.3	53.7	59.2	40.8
2,000- 3,000...	41.6	58.4	36.5	63.5	37.8	61.3	47.8	52.2
3,000- 5,000...	29.7	70.3	22.2	77.8	30.3	69.7	41.7	58.3
5,000-10,000...	12.6	87.4	13.9	86.1	9.5	90.5	18.7	81.3
10,000 and over	1.3	98.7	2.4	97.6	....	100.0	....	100.0

(a) Includes immunizations against smallpox, diphtheria, typhoid fever, scarlet fever, whooping cough, hay fever, etc.

Considering persons of various income levels in communities of all sizes, members of families with less than $1,200 income for the year had 70 per cent of their immunizations done by public agencies. As income increases, the percentage of immunizations performed by public agencies decreases sharply, until in families with incomes of $5,000 to $10,000, 13 per cent and in the $10,000 and over class only 1 per cent of the immunizations were done under the auspices of public facilities.

For families with incomes under $1,200, it will be seen that the percentage of the immunizations in public clinics is largest in cities over 100,000, decreasing from 86 per cent in these places to 72 per cent for cities of 5,000 to 100,000 and 65 per cent for towns under 5,000 and rural areas. For the other three income groups below $5,000, the situation is reversed and there is a consistent rise from the large cities to the rural areas in the proportion of immunizations performed in the public clinics. For example, in the $3,000 to $5,000 income group, 22 per cent of the immunizations in cities over 100,000 are performed with public facilities as against 30 per cent in cities of 5,000 to 100,000 and 42 per cent in towns under 5,000 and rural areas. In other words, in the small towns and rural areas the immunization work of the public facilities is less concentrated upon the lower income classes than in the cities—in the smaller places a larger proportion of immunizations among the higher income classes (at least up to $5,000 and possibly to $10,000) is performed under the direction of public agencies.

Health and Check-Up Examinations.—Health and check-up examinations amounted to 65 per 1,000 persons during the year of the study, exclusive of well-baby care which really constitutes check-up examinations for infants. Including well-baby care, there were 82 examinations per 1,000 persons, and the rate per 1,000 increased from 68 among families with $1,200 to $2,000 to 234 among those with $10,000 and more. The families with less than $1,200 showed a rate of 83 per 1,000 or approximately the same as that of the $3,000 to $5,000 class. The high rate for the lowest income class was largely due to the incidence of well-baby care, probably because of the proportionately larger number of infants among the families of this income level.

The proportion of the health and check-up examinations that were performed in the public clinics as contrasted with the proportion performed by private practitioners, with particular reference to income level and size of community (Table 14), is of great interest. In the entire group observed, 53 per cent of the examinations were performed in public clinics, examinations at public schools being considered clinic examinations. For all types of communities combined, the percentage of the examinations in public clinics ranged from 76 per cent in the income level $1,200 to $2,000 to 5 per cent in the class with $10,000 and over. Those with less than $1,200 had 72 per cent of their examinations done in public clinics, or only slightly less than the maximum of 76 per cent in the $1,200 to $2,000 class.

TABLE 14

PER CENT OF HEALTH EXAMINATIONS PERFORMED IN PUBLIC CLINICS AND IN PRIVATE PRACTICE

Examinations(a) in Surveyed Families in Eighteen States During a Twelve-Month Period, 1928-1931

Family Income	All Communities		Cities Over 100,000		Cities 5,000 to 100,000		Towns Under 5,000 and Rural Areas	
	Per Cent Performed in:							
	Public Clinics	Private Practice	Public Clinics	Private Practice	Public Clinics	Private Practice	Public Clinics	Private Practice
All incomes.....	52.6	47.4	48.9	51.1	24.6	75.4	76.0	24.0
Under $1,200...	71.6	28.4	85.7	14.3	44.0	56.0	83.7	16.3
$1,200- 2,000...	76.1	23.9	78.2	21.8	45.2	54.8	84.6	15.4
2,000- 3,000...	54.5	45.5	56.0	44.0	26.2	73.8	65.8	34.2
3,000- 5,000...	41.9	58.1	42.1	57.9	17.9	82.1	64.5	35.5
5,000-10,000...	20.3	79.7	24.5	75.5	10.3	89.7	34.1	65.9
10,000 and over	5.1	94.9	6.7	93.3	2.1	97.9	66.7	33.3

(a) Includes health, school, insurance, employment, camp, well-baby examinations, check-ups of particular organs or for particular pathologic conditions, etc.

Considering all incomes combined in the three types of communities, 49 per cent of the examinations were performed in public clinics in cities over 100,000, as against 25 per cent in cities of 5,000 to 100,000, and 76 per cent in towns under 5,000 and rural areas. The surprising thing about this is the small percentage of the examinations that were performed in public clinics in cities with populations of 5,000 to 100,000 and the very large percentage in the small towns and rural areas.

For the various economic groups, the percentages of the examinations performed in public clinics are consistently lower in cities of 5,000 to 100,000 than in either the large cities or in the small towns and rural areas. In the four income classes from $1,200 to $10,000, these percentages are consistently higher for small towns and rural areas than for cities over 100,000. The figures also show the same relation for those with incomes of $10,000 and more, but the numbers in this income class in the rural areas are too few to provide reliable percentages. For incomes under $1,200 the percentage of the examinations in public clinics is approximately the same in large cities and rural places (86 and 84 per cent, respectively).

THE LACK OF MEDICAL CARE

A large body of information, dealing with the prevalence and the incidence of disease or defects, demonstrates the almost universal need for medical care. In addition, the dictates of modern medical knowledge call for some preventive care for everyone. It is therefore appalling to discover what large fractions of the population in the course of a typical year receive no medical care whatever. The lack of medical care disclosed in the Committee's survey of 9,000 white families is the more striking in view of the facts (1) that a family was counted as receiving medical care if any one member obtained medical service and (2) that an individual was considered as receiving medical care if he obtained medical service of any kind or in any amount.

The percentage of individuals who obtain no medical service is greater the lower the family income (Table 15), ranging from slightly less than 14 per cent among those in families with incomes of $10,000 and more to nearly 50 per cent for those in families with less than $1,200. Considering all income classes in such proportions as were presumed to obtain in the United States in the period 1928-1931, it is estimated that 38 per cent of the white population experiences a typical year of life without receiving any medical, dental, or eye care. This means that two persons in each five not only receive no medical care for illness, but that they receive no care for the maintenance of health or for the prevention of disease, they receive no periodic examination to discover incipient or concealed pathologic conditions and no professional counsel for the correction of physical defects or of unhygienic habits of living. Nor do these figures take adequate account of the lack of medical care, because they are without regard for those in the population who receive only insufficient amounts and kinds of care.

TABLE 15

INDIVIDUALS WHO RECEIVE NO MEDICAL, DENTAL, OR EYE CARE(a)

Family Income	Per Cent Who Received No Care
Under $1,200	46.6
$1,200- 2,000	42.2
2,000- 3,000	37.3
3,000- 5,000	33.4
5,000-10,000	24.4
10,000 and over	13.8
All incomes	38.2

(a) Based on the records for 38,668 individuals in 8,639 white families surveyed for twelve consecutive months, 1928-1931. (See Publication No. 26, listed at the end of this volume.)

AN APPRAISAL OF CARE RECEIVED

The incidence of illness and physical defects provides an index of the needs for medical care in the diagnosis and treatment of disease. If to these there were added indices of unrecognized illness and of unrecognized defects, and of the needs for the prevention of disease, the total would provide an index to the true need for medical care. The amount and kinds of care actually received by the people measure only the current effective demand in the purchase of medical service. It is less than the true need for many reasons. Ignorance, apathy, and —as is indicated by the data summarized in the preceding pages—financial circumstances are probably among the principal factors responsible for the finding that effective demand results in the receipt of less medical care than true need requires.

For nearly ten years the Committee on Administrative Practice of the American Public Health Association has been engaged in formulating standards for the appraisal of urban and rural health work. Their efforts have been so successful that the appraisal forms which they developed have become invaluable in measuring the extent to which health services in a community equal the true need of the population. The difficulties which arise in an attempt to formulate similar standards for the medical service which individuals in a community should receive need not be explained at length. Standards of good medical care established upon the ideal could meet few pragmatic requirements; existing medical agencies probably could not supply services equal in quality or volume to those which the standards prescribed, and the people probably would not, and could not afford to, buy them if they could be furnished. Of greater significance are standards developed upon reasonable estimates of the minimum services sufficient to provide the fundamentals of good medical care. Such standards have been formulated in one of the Committee's studies * with the intention of providing the necessary yardstick for the evaluation of the current receipt of medical care in the United States and may be used as a basis for comparing the receipt of care (as evidenced in the survey of nearly 9,000 families) with reasonable standards of the people's needs.†

The standards of good medical care invoked here were developed from estimates of the expected incidence of morbidity in a general population and from professional judgments of the numbers and types of services needed in the prevention of disease, in the correction of physical defects, and in the diagnosis and treatment of each common ailment. These standards predicate no specified costs and no specific form of medical organization. For details of method utilized in their development, the reader is referred to the original document.* In Table 16 there is summarized a comparison of the current receipt and of the estimated true need for medical care. The tabulation is restricted to items for which comparable data are available from the family survey and from the *Fundamentals Study*.‡ Thus, by comparison with a morbidity experience of 844.5 illnesses per 1,000 persons among the surveyed families, the standards predicate that there are 936.3 (diseases and defects which require medical care) per 1,000 persons. To illustrate the further meaning of the data in Table 16, a few examples may be cited. In current practice there are 58.6 cases of illness hospitalized (for one day or longer) in general hospitals * in the course of a year among each 1,000 persons. The standards of good medical care say that there should be 107 per 1,000 persons. It is the current practice among white persons that each 1,000 persons receive 745.8 days of care in general hospitals; if these people were receiving a volume of medical care equal to their need, they would be receiving 1,384.7 days of general hospital care. Similar comparisons may be made for the other items enumerated in the upper half of the table, where the rates are expressed in terms of services received or needed per 1,000 persons. In the lower half of the table the comparisons are expressed in terms of rates per 1,000 illnesses.

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* See Publication No. 22, listed at the end of this volume.

† For more detailed comparisons, see Chapter X of Publication No. 26, listed at the end of this volume.

‡ The term *Fundamentals Study* refers to the study of the Fundamentals of Good Medical Care presented in Publication No. 22, listed at the end of this volume.

The standards of good medical care are computed in the original document from which they are excerpted in terms of services per 100,000 persons in a population constituted as was that of the United States in 1930. With certain minor exceptions, it is assumed that the need for medical care is substantially the same among all the economic fractions of the population. The estimates of medical services which the people need take no account of the purchasing power of the people; the standards apply equally to rich and poor. The rates which appear in the first column of Table 16 are (weighted) averages among the rates for various income groups, and, as has already been noted, the amount of medical care received by families in various income groups may be markedly different. It is therefore not altogether sound to compare these average rates, which conceal differences among the income classes, with standards which apply equally to all economic groups. To gain a true insight into the relation of current practice to the requirements of true need for medical care, the rate for each income class must be compared separately with the standard; and such comparisons appear in Figs. 16 to 20. In each of these charts the standard appears as a horizontal line near the top of the drawing; the same numerical standard applies to

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* All hospitals exclusive of tuberculosis sanatoria and institutions for those afflicted with mental disease.

TABLE 16
THE MEDICAL SERVICES RECEIVED AND NEEDED

Illness or Unit of Service	Services Received, Family Survey(a)	Services Needed, Fundamentals Study(b)
	Rates per 1,000 Persons	
Illnesses(c)	844.5	936.3
Hospitalized cases (1 day or longer):		
All hospitals	60.1	113.5
General hospitals only(d)	58.6	107.0
Days of hospital care:		
All hospitals	937.7	3,752.5
General hospitals only(d)	745.8	1,384.7
Home, office, and clinic calls (physicians)(e)	2,391.2	5,649.5
Dental care (persons over 3 years of age)	241.1	1,000.0
Health examinations(f)	81.6	941.9
Immunizations(g)	58.7	185.3
Number of refractions or glasses(g)	41.5	175.0
Home and office calls (secondary and sectarian practitioners)	213.4	....
	Rates per 1,000 Illnesses(c)	
Hospitalized cases (1 day or longer):		
All hospitals	70.8	121.2
General hospitals only(d)	69.0	114.3
Surgical cases hospitalized	46.9	51.3
Surgical cases not hospitalized	29.4	47.3
Hospitalized cases having special nursing(h)	180.4	578.3(i)
Cases having X-ray services	29.5	186.4
Cases having laboratory procedures	71.5	581.7
Maternity cases having prenatal or postnatal calls(j)	991.5	1,000.0
Prenatal and postnatal calls(j)	8,942.3	19,360.0

(a) For further details, see Publication No. 26, listed at the end of this volume.

(b) For futher details, see Chapter X in Publication No. 26 and Publication No. 22, listed at the end of this volume.

(c) Where no illness is involved, health examinations, immunizations, dental and eye cases are excluded. Well-baby care and minor non-disabling illness are also excluded.

(d) Includes all hospitals except tuberculosis sanatoria and mental disease hospitals.

(e) Where no illness is involved, health examinations, immunizations, dental and eye cases are excluded. Well-baby care is also excluded; minor non-disabling illness is included.

(f) Includes well-baby care.

(g) Includes service whether or not accompanied by illness.

(h) Rates per 1,000 hospitalized cases. Restricted to cases involving one day or more of hospital care. Includes care in a tuberculosis sanatorium and in a mental disease hospital.

(i) Excludes care in a tuberculosis sanatorium and in a mental disease hospital.

(j) Rates per 1,000 maternity cases.

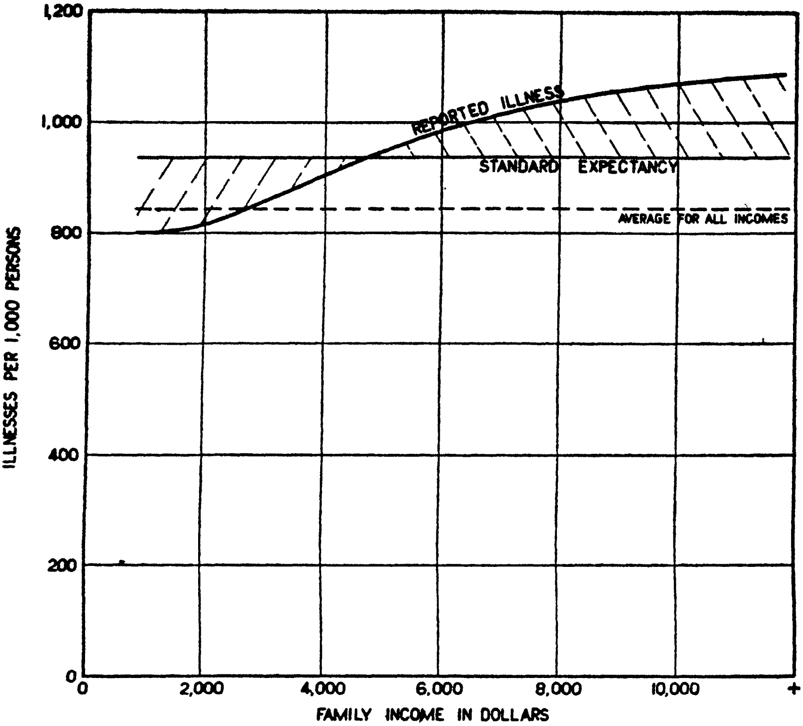

FIG. 16. A COMPARISON OF RECOGNIZED NEED WITH AN ESTIMATE OF THE TRUE NEED FOR MEDICAL CARE

Recognized need is measured in terms of reported illness, and true need in terms of the standard expectancy of diseases and defects requiring medical care.

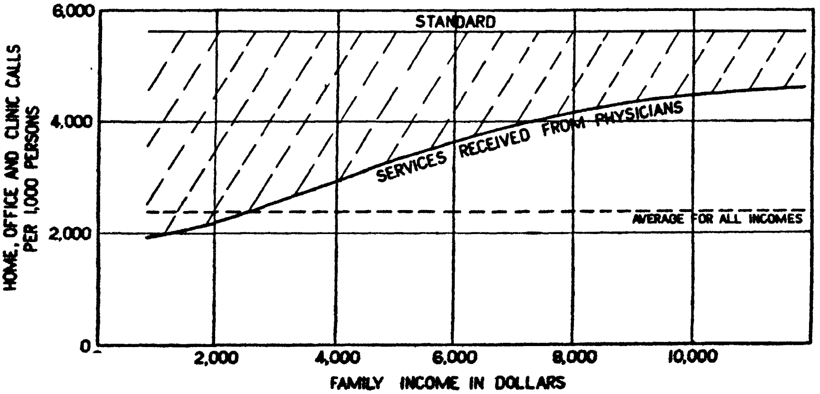

FIG. 17. A COMPARISON OF SERVICES RECEIVED FROM PHYSICIANS (HOME, OFFICE, AND CLINIC CALLS) BY PERSONS IN VARIOUS INCOME CLASSES WITH AN ESTIMATE OF THE TRUE NEED

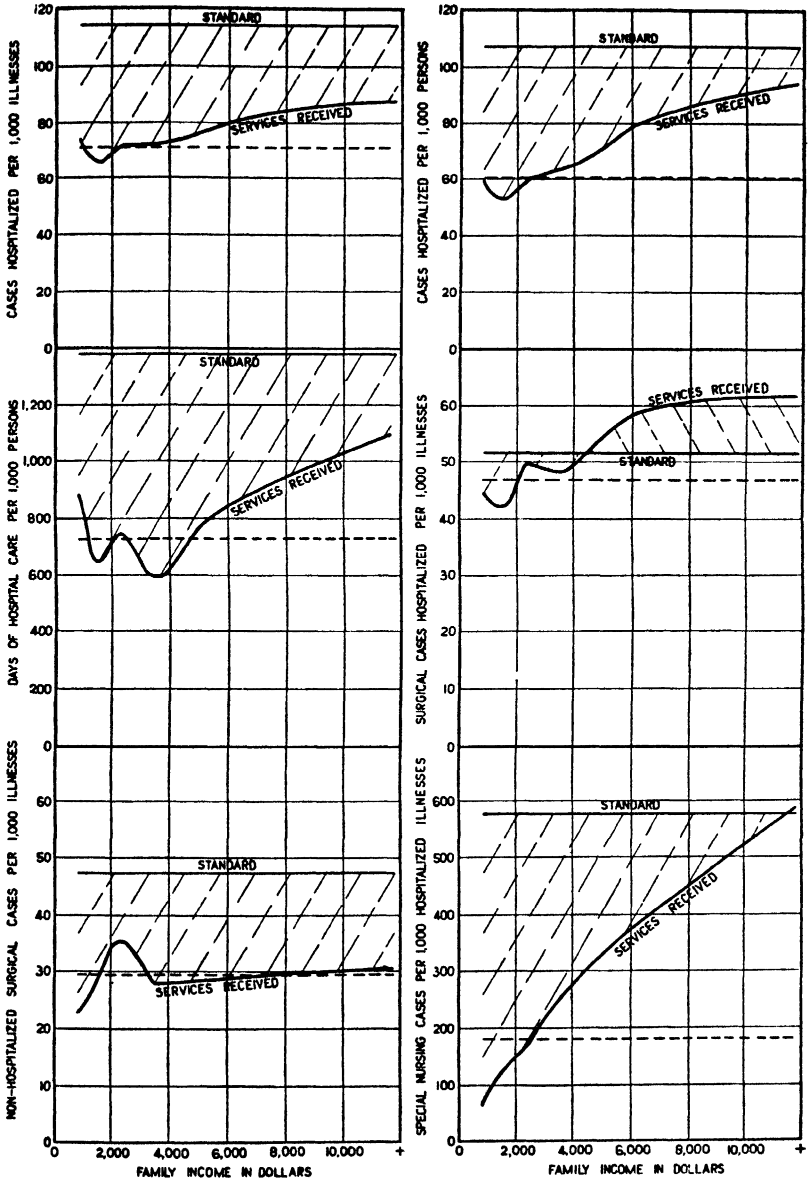

FIG. 18. SOME COMPARISONS BETWEEN HOSPITAL SERVICES RECEIVED BY THE SURVEYED FAMILIES AND THE ESTIMATED TRUE NEEDS

The broken horizontal lines show the average receipt of care for all income classes combined in weighted proportions.

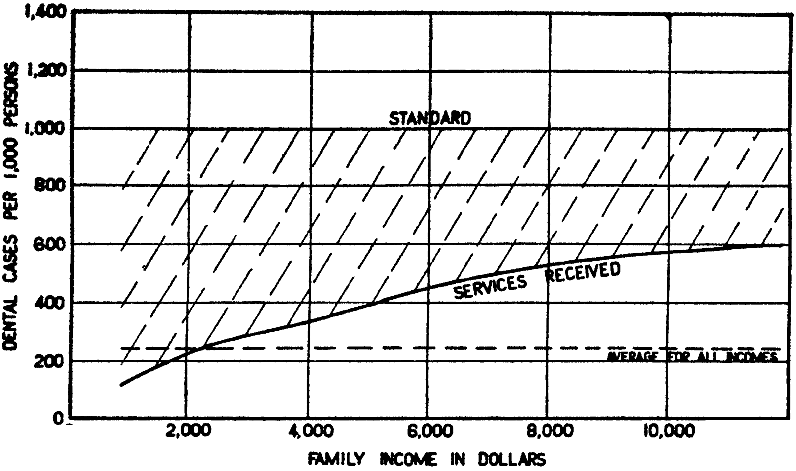

FIG. 19. A COMPARISON BETWEEN THE REPORTED NUMBER OF DENTAL CASES PER 1,000 PERSONS AND THE ESTIMATED STANDARD

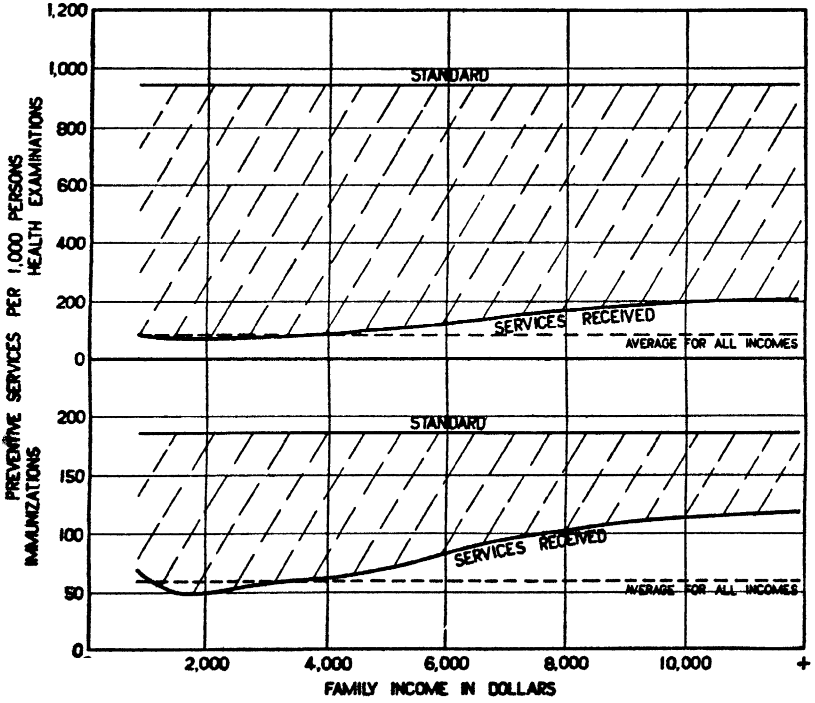

FIG. 20. A COMPARISON BETWEEN HEALTH EXAMINATIONS OR IMMUNIZATIONS RECEIVED PER 1,000 PERSONS AND THE ESTIMATED TRUE NEED

each income class. Below the standard appears another horizontal line, showing the average (incidence of illness or) receipt of care among all income classes combined in proportions such as are presumed to obtain in the United States. The curve shows the (reported illnesses or the) current receipt of care for persons in various income classes. The area between the standard and the curve is shaded to bring more strikingly to the attention of the reader the extent to which current practice falls short of, or exceeds, the estimated true need of the people.

Study of the charts brings out some interesting points, only a few of which require comment. For example, persons in the lowest income class are receiving one-third and those in the highest four-fifths as many home, office, and clinic services from physicians as the standard specifies. If the standard for this type of service is valid, certainly not the poor and not even the rich are receiving adequate amounts. The experience among representative families shows that only 60 per cent of the required proportion of illnesses are hospitalized; only 55 per cent as many cases (per thousand individuals) are hospitalized as the standard specifies; and the people receive only 54 per cent as many days of hospital care as are desirable. No single income class shows a rate for any one of these three indices of hospitalization which closely approximates the amount prescribed in the standard.

Differences of professional opinion on the desirability of hospitalization for one or another disease for which this service is specified in the *Fundamentals Study*, and differences of opinion on the average length of hospitalization desirable for each, might alter the standard. If minimal defensible figures were used, the standards might be reduced to such levels that they would not exceed the actual experiences of those economic groups which received the most frequent or the most extensive hospitalization; but it seems entirely improbable that current professional judgment would reduce the standards so much that they would fail to exceed current practice.

Taken by and large, it must therefore be said that neither the rich nor the poor receive medical care in the hospital as often or as extensively as their true needs and the dictates of good medical practice warrant. This conclusion is significantly conditioned by a basic assumption which runs through the

PART III

THE COSTS TO THE FAMILY

CHAPTER V

THE AVERAGE CHARGES TO THE FAMILY *

In this and the three following chapters the costs of medical care are considered from the point of view of the family. Except where otherwise specified, the data which are presented are taken from the Committee's survey of some 9,000 families, each of which was under observation for twelve consecutive months during the years 1928 to 1931.†

THE VALIDITY OF MEASURING COSTS IN TERMS OF CHARGES

Much of the detailed analysis of family costs is measured in terms of charges incurred rather than in terms of expenditures. This is a procedure of necessity because charges are always available in itemized form, but expenditures are often lumped for various individuals, or illnesses, or agencies. However, it will appear presently that the measurement of costs in terms of charges is substantially valid.

Some people who receive medical care look with complacence upon failure to pay certain medical charges; they have grown accustomed to the priest-like function of the physician and hold it no disgrace to disregard his bills, though they may pay promptly and fully the bills of the butcher, the baker, and the candlestick maker. Others consider the physician's charge as binding an obligation as the tradesman's. Among all the surveyed families (considered in weighted proportions ‡), expenditures equal 95.9 per cent of the year's charges. Hence, for all families combined, expenditures and charges with equal validity measure the total costs of medical care. Among families with the lowest incomes (under $1,200), expenditures were 87.8 per cent of charges; and among those with incomes of $1,200 to $2,000, $2,000 to $3,000, $3,000 to $5,000, $5,000

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* We are indebted to Miss Margaret C. Klem for assistance in the preparation of this chapter.

† For more detailed information and analysis, see Publication No. 26, listed at the end of this volume.

‡ For the purposes of this family survey, an appropriate standard distribution of population with respect to income was adopted. When data for families or persons in various income classes are merged, the combinations are made with due regard to these proportions which are presumed to obtain in a general population. The standard is cited in Appendix Table 1-A.

to $10,000, and $10,000 and over, the percentage increases regularly, *viz.:* 92.3, 95.5, 97.2, 98.9, 100.6 per cent, respectively.

The charges incurred in a year and the expenditures made in the same year are not necessarily co-terminous. Many families begin a survey year with outstanding bills for illnesses and services of a preceding year; similarly, many finish the year with outstanding charges, some of which will be paid in succeeding months. It might be anticipated that non-payment will be greater the greater the drain which medical care or other unbudgeted expense has made upon the family purse in a preceding period, especially if expenditures for past experiences are being paid in the survey period or if the medical charges are due to disabling illness of the wage-earner.

All things considered, there is no conflict between the fact that not all charges are paid and the finding that the expenditures during a survey year are nearly equal to the new charges incurred during the same year.

AVERAGE CHARGE AND THE FAMILY INCOME

In a general population the average annual charge for medical care increases from about $50 per family for those with annual incomes of less than $1,200 to over $500 per family for those with incomes of $10,000 or more. In general, charges are highest in the largest cities and lowest in the small towns and rural areas; the average charges for families residing in cities of 100,000 or more persons increase from $78 in the lowest to $551 in the highest income class; charges for families in cities of 5,000 to 100,000 increase from $47 to $461; and charges for families in small towns and rural areas increase from $44 to $390 (see Fig. 21).*

One may ask, what causes this tenfold increase in the costs of medical care? About 86 per cent of the persons in the highest income class received medical care of some type during the year, as compared with 53 per cent in the lowest income class (see Chapter IV). With the exception of hospital care, the number of services received per person is larger in the higher

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* Preliminary tabulations indicate that the data will be substantially confirmed by the findings from a survey conducted among the families of their field staff by the Metropolitan Life Insurance Company. A preliminary report on this study was presented by Dr. Donald B. Armstrong at the meetings of the American Medical Association, New Orleans, May 18, 1932. (*A Study of Sickness Cost and Private Medical Practice*, Metropolitan Life Insurance Company, New York.) A more detailed statistical study is in progress. The provisional data have been kindly made available to us by the Statistician of the Company, Dr. Louis I. Dublin.

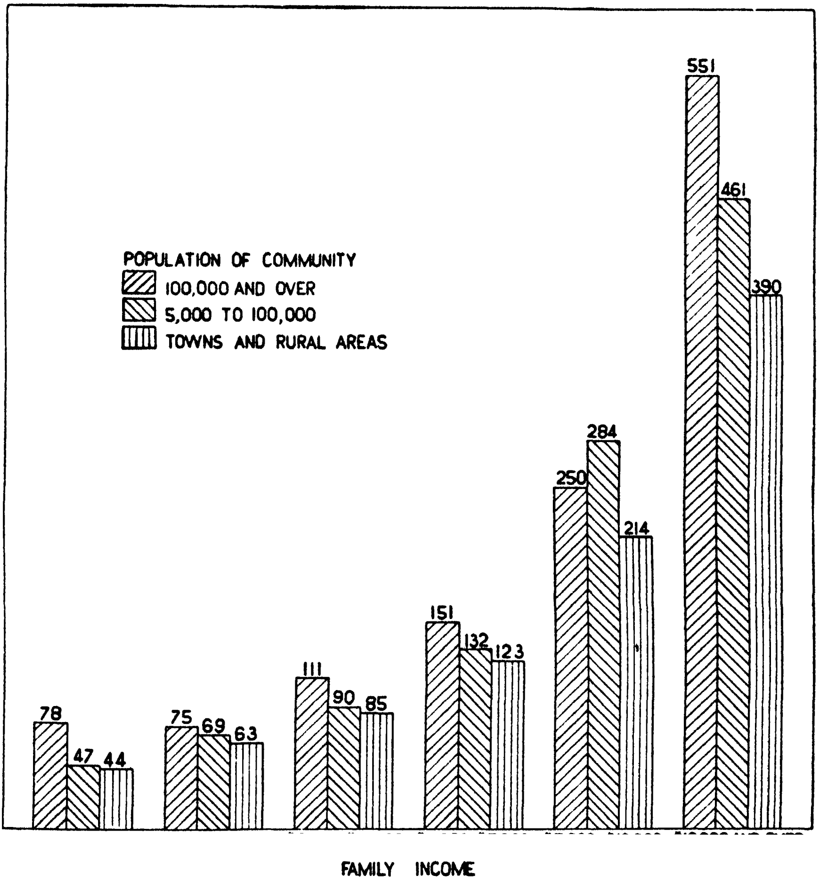

FIG. 21. THE AVERAGE ANNUAL CHARGES FOR MEDICAL CARE TO FAMILIES WITH VARIOUS INCOMES, LIVING IN LARGE AND SMALL CITIES OR IN RURAL COMMUNITIES

than in the lower income brackets, but the increase is not tenfold for any type of service. The wealthy pay more than the poor per unit of medical service, just as they do for some other types of service. When rich and poor are combined in proportions such as are presumed to obtain in the United States, the average charge for medical care is $108 per family.*

When the average incomes for the families in the several income classes are combined in appropriate proportions, it develops that the average income for all families is $2,605 per annum.† The average annual charge for all medical care ($108 per family) therefore equals 4.2 per cent of the average income. Expenditures for medical care are, on the average, 95.9 per cent of charges. Hence, expenditures are, on the average, 4.0 per cent of the family's income.

It has already been noted that the cost of medical care varies tenfold between the poorest and richest families. But does it remain a constant fraction of the family income? In Appendix Table 4-A the relations between charges and income and between expenditures and income are shown for families which reside in large and small communities, according to the size of the family income. It will be noted that medical care consumes a larger fraction of the annual income among the poor than among the rich, among those living in large cities than among those in smaller places. At the one extreme, among families with less than $1,200 per annum living in large cities, charges equal 9.3 per cent and expenditures 8.2 per cent of income; at the other, among families with $10,000 and more per annum living in small towns and rural areas, charges equal only 3.1 per cent and expenditures only 3.4 per cent of income.

That medical care consumes different fractions of income according to the size of the community of residence and the size of the income is not surprising. Among the several income classes the charges tend to be larger proportions of income in the large cities than in the smaller places. The greater availability of facilities in the larger places must tempt larger expenditures. Furthermore, income in the large and middle-sized cities is all or practically all in "cash," *i. e.*, in the form of spendable money; but income in the small towns and rural places is in part in the form of farm produce and in part in actual money. Medical care is on the whole a money commodity, and, other things being equal, it will be purchased less by rural than by urban families with the same total income. It is recognized, of course, that the same amount of money may buy more in rural than in urban areas and that this applies to medical care as well as to other commodities or services, because medical fees are ordinarily lower in the smaller than in the larger places. Though charges for medical care are a somewhat smaller fraction of income in the smaller places than in the large cities, the volume of medical care for which the charges are incurred may not be unlike.

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* This weighted average depends upon the standard used for the estimated proportion of families in each income class. In all computations based upon the Committee's survey of 9,000 families, the standard cited in Appendix Table 1-A is used. The standard is itself based upon provisional estimates prepared for use in the studies reported in Publications No. 25 and 26. A more comprehensive discussion of income distribution and the results of more recent compilations will be found in Publication No. 25. If the standard were derived from the final estimates presented in Publication No. 25, the weighted average charge per family would be somewhat less than $108; it would probably fall between $100 and $105.

† Computed from the average income for each income class and the income distribution cited in the standard, Appendix Table 1-A.

Furthermore, instead of 4.2 per cent, as for all families combined, those in the lowest income class incur charges which range from 5.4 to 9.3 per cent of their incomes. It may not be unreasonable that the costs of medical care should consume one dollar in each twenty-five in all white families; but it is difficult to accept with composure a finding that the obligations for medical care consume one dollar in each eleven among the poor. If 9 per cent of the income of those in the higher brackets were pledged for medical care, one might argue that those who are well-to-do or even wealthy live with so broad a financial margin between the needs for subsistence and the total income that there is still ample flexibility in the budget to accommodate the medical bill. In these higher income levels, however, medical charges are only 3 or 4 per cent of income; it is among the families whose incomes are less than $1,200—an amount which is less than the demand of a minimum budget for decent subsistence—that the medical bill attains values of 5 to 9 per cent. Is it surprising that the average medical expenditure in a year for the poorest families is only 88 per cent of the charges incurred in the same year? Is it not more surprising that they spend as much as they do from their scant incomes?

For the families whose incomes range from $1,200 to over $10,000, the percentage of the income which is applied to the costs of medical care (charges or expenditures) is surprisingly constant. Disregarding size of community, the averages range only from 3.7 to 4.3 per cent for charges and from 3.8 to 4.1 per cent for expenditures.

It was established earlier that the need for medical care is not strikingly different among families, regardless of income. How, then, do they manage to procure medical care by spending for this commodity approximately the same percentage of incomes which vary tenfold and more? In an earlier chapter it was pointed out that those in the highest income classes do not obtain all the medical care they need and that those in the lower economic classes obtain far less. All spend about the same fraction of their income for medical care; but at the top of the economic ladder the expenditure purchases such volumes of care as the family desires, and at the foot it purchases as much as the same fraction (but smaller amount) will buy. To be sure, the poor receive considerable volumes of free care; but earlier analyses demonstrated that this does not compensate for the limitations which financial status places upon the purchase of paid medical care by the poor.

AVERAGE COMPOSITION OF THE FAMILY MEDICAL BILL

About 40 per cent of the total medical charges are made by physicians, 18.5 per cent by the dentist, 13 per cent by the hospital, and 8 per cent by nurses (Fig. 22). The cost of drugs and medicines accounts for 13 per cent of the total bill; care of the eyes is responsible for 2.5 per cent of the total; and the services of secondary and sectarian practitioners represent approximately the same amount.

The charges for physicians' services lead all other items among families in each type of community. In the largest cities dentistry comes second, medicines third, and hospitals fourth; in the smaller cities charges for medicines exceed charges for dentistry; and in rural areas hospital charges exceed those for medicines and for dentistry.

A survey of 3,281 families of industrial policyholders of the Metropolitan Life Insurance Company made by Lee K. Frankel shows results similar to these.* The study covered only a six months' period, from January to July, 1929; but of the total expenditures for this period, 42.7 per cent was for the services of the physician, 12.5 for hospital care, 3.8 for the nurse, 7.9 for the dentist, 12.9 for medicines, and 2.1 for refractions and glasses.

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* *Cost of Medical Care*, by Lee K. Frankel (Metropolitan Life Insurance Company, New York, 1930).

In the Committee's study charges for the services of physicians account for over one-third of the total medical bill for families in each income class (Table 17) and are responsible for almost one-half the total among the poorest families. Next to physicians' services, families in the income classes under $2,000 find that drugs and medicines or hospital care is the next largest item in their medical bill; then comes dentistry, and last nursing among the principal types of medical care. Among families with incomes of $2,000 to $5,000 dentistry has second place in the medical bill; then come medicines, hospital, and nursing. The sequence again changes for families with incomes of over $5,000. Here also dentistry is the second in the list; but nursing takes third place, hospital fourth, and drugs and medicines fifth. Considering only the

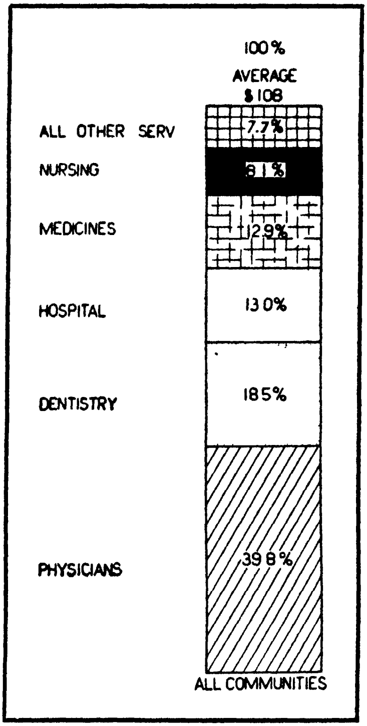

FIG. 22. THE COMPOSITION OF THE AVERAGE MEDICAL BILL FOR THE FAMILY

Families in all communities and in all income classes have been combined in weighted proportions.

five main items of medical costs, charges for dentistry and nursing which are responsible for the smallest fractions of the total bill to the poorest families are, next to physicians, chiefly responsible for the size of the bill in the highest income classes.

Regardless of the fact that some services constitute a smaller fraction of the total bill in the highest income classes, the average charge per family for each type of service is higher among the well-to-do than among those in modest or poor circumstances, and this is true whether we consider the average as applied to all families or only to those who received the service.

TABLE 17

COMPOSITION OF THE FAMILY'S MEDICAL BILL

Per Cent of the Total Charged for the Specified Items, According to Family Income; Based on Data for 8,639 White Families With Known Incomes, Surveyed for Twelve Consecutive Months, 1928-1931

Family Income	Number of Families	Average Total Charges	Per Cent of Total Charged per Annum For:								
			Physicians(a)	Hospital(b)	Nursing(c)	Dentistry	Medicines	Refractions and Glasses	Secondary and Sectarian Practitioners(d)	All Other	Total
Under $1,200..	1,336	$ 49.17	44.5	17.7	3.8	8.4	17.6	2.5	3.5	2.0	100.0
$1,200- 2,000..	2,837	66.81	43.6	13.9	4.7	13.5	16.5	2.2	1.9	3.7	100 0
2,000- 3,000..	2,235	94.84	41.5	14.4	5.0	17.3	14.5	2.4	2.1	2.8	100.0
3,000- 5,000..	1,196	137.92	39.3	11.6	7.5	20.4	12.7	2.9	1.8	3.8	100.0
5,000-10,000..	723	249.35	35.6	10.5	14.6	22.1	9.2	2.9	2.9	2.2	100.0
10,000 and over........	312	503.19	34.7	12.5	13.7	26.0	7.1	2.3	1.7	2.0	100.0
All incomes(e)	8,639	$108.14	39.8	13.0	8.1	18.5	12.9	2.5	2.2	3.0	100.0

(a) Includes all physicians except the oculist and those whose charges are merged in the non-itemised charges of institutions (hospitals, clinics, etc.) and laboratories (clinical, X-ray, etc.).

(b) Excludes special nursing.

(c) Excludes all nursing which is provided in ordinary hospital care.

(d) Includes charges for chiropodists, midwives, osteopaths, chiropractors, Christian Science healers, etc.

(e) All income classes have been combined in the proportions which are presumed to obtain in the United States (see Appendix Table 1-A).

Instead of dealing with each unit fraction of the medical bill separately, the items may be considered in certain combinations. The percentages of the total bill due to two or more types of service are summarized for three income classes in Table 18. These figures show in a simple fashion the composition of the major portion of the family's medical bill.

TABLE 18

PERCENTAGE OF TOTAL MEDICAL BILL ACCORDING TO FAMILY INCOME AND SERVICE RECEIVED

Service	Under $1,200	$2,000-$3,000	$5,000-$10,000
Physician and medicines	62.1	56.0	44.8
Physician and dentist	52.9	58.8	57.7
Hospital and nurse	21.5	19.4	25.1
Physician, hospital, and nurse	66.0	60.9	60.7
Physician, dentist, hospital, and nurse	74.4	78.2	82.8
Physician, hospital, nurse, and medicines	83.6	75.4	69.9

CHARGES FOR CURATIVE AND PREVENTIVE SERVICES

For all families in a general population, 78.5 per cent of the total charges are incurred for care in illness, 17.4 per cent for dental care, a scant 3 per cent for refractions and eye-glasses, about 1 per cent for health examinations, and only a little more than one-half of 1 per cent for immunizations (Fig. 23). Ignoring that fraction of the charges for dental and eye care which is for services of a preventive nature, and considering only health examinations and immunizations, it appears that 1.4 per cent of the medical bill charged directly to the families is incurred for strictly preventive services.

Charges for illness plus charges for dental care account for almost the entire medical bill and constitute approximately the same percentage of the total in all income classes; the sums for these two items range from a minimum of 94.4 per cent of the total for families with incomes of $10,000 and over to a maximum of 96.7 per cent in families with incomes of $1,200 to $2,000.

Preventive medicine has taken great strides in recent decades and much is being said about the importance of an increasing emphasis upon the prevention rather than the cure of disease. But it is apparent from these data that no appreciable fraction of the charges incurred for medical care is due to the purchase of preventive medicine.

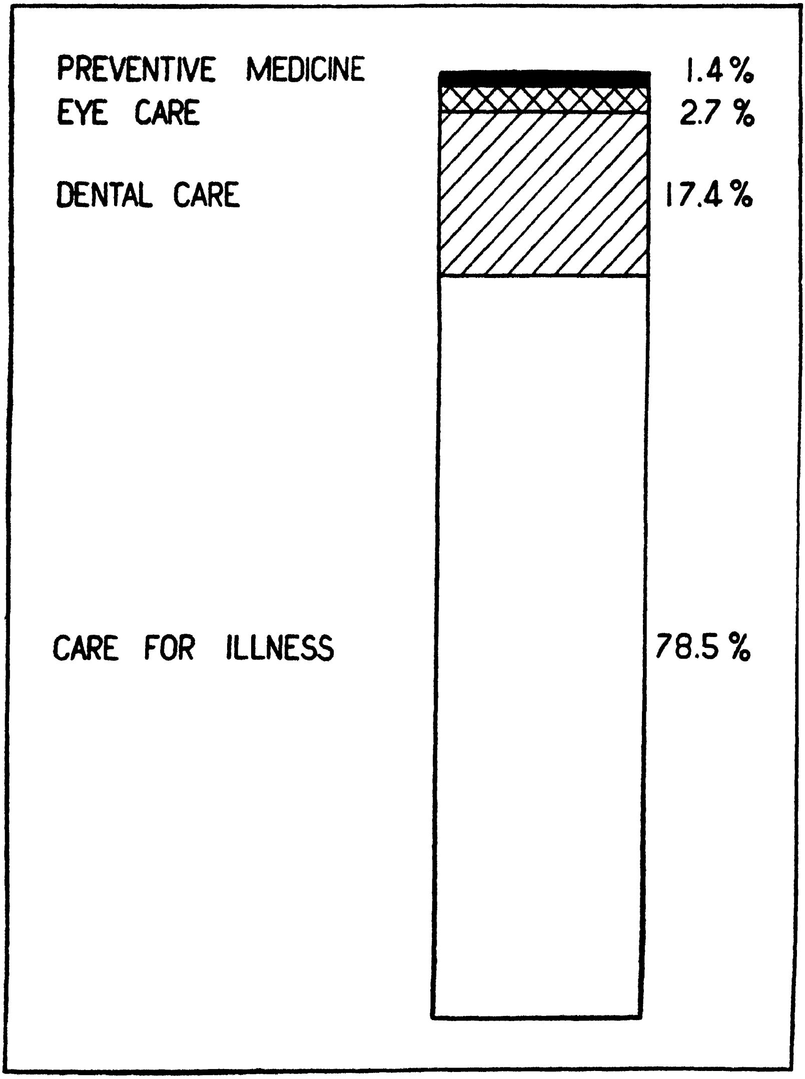

FIG. 23. THE COMPOSITION OF THE MEDICAL BILL IN TERMS OF CHARGES INCURRED BY THE FAMILY FOR CURATIVE AND PREVENTIVE SERVICES

The chart shows the probable distribution of family charges for a general population group in the United States.

AVERAGE CHARGE PER PERSON

The average charge per person for medical care purchased by the individual or the family varies according to the size of community and the family income (Table 19); for those living in large cities it is $32.39, for those in medium-sized cities it is almost $10 less, and for those in small towns and rural areas it is about one-half as much as for those in the largest cities. For a general population the average annual charge for medical care is $22.58 per person, with variation according to family income from $9.25 among the poorest to $115.37 among the wealthiest families. The average charge per person increases with income even more rapidly than does the average charge per family: the average charge per *family* among those having incomes of $10,000 and over is about ten and one-half times as great as the average charge among those having less than $1,200; the average charge per *individual* in the highest income level is over 12 times as large as in the lowest income class. In the large cities persons in the highest income group have charges about 7 times as great as

TABLE 19

AVERAGE CHARGE PER PERSON FOR MEDICAL CARE IN A YEAR

Based on Data for 38,427 White Persons in 8,639 Families With Known Income, Residing in Communities of Specified Size, Surveyed for Twelve Consecutive Months, 1928-1931[a]

Size of Community (Population)	Average Charge per Person per Annum in Families With Specified Income						
	Under $1,200	$1,200-$2,000	$2,000-$3,000	$3,000-$5,000	$5,000-$10,000	$10,000 and Over	All Incomes [b]
Cities of 100,000 and over	$17.51	$15.42	$23.01	$32.30	$55.97	$127.06	$32.39
Cities of 5,000 to 100,000	7.07	13.15	18.54	25.85	62.86	108.39	23.89
Towns of less than 5,000, and rural areas	8.25	12.32	18.11	25.25	42.73	83.06	15.80
All communities[b]	9.25	13.17	19.85	28.52	54.16	115.37	22.58

[a] Excludes 241 individuals with unknown charges.

[b] When various community or income classes are merged, they are combined in weighted proportions according to the distribution in the standard shown in Appendix Table 1-A.

those in the lowest income group; in medium-sized cities their charges are over 15 times as high; and in rural areas about 10 times as large.

It is interesting to speculate on the meaning of these relations. First, it should be recalled that the size of family is larger in the lower than in the higher income brackets. Second, it will be seen later (Table 21) that the average charge per family remains substantially constant with increasing size of family among those families which have incomes of less than $5,000, and increases with increasing size of family only in the income levels $5,000 and over. Third, it will appear shortly (Table 22) that the percentage of persons who incur no charges or receive free care only, declines very markedly as we proceed from the lowest to the highest income classes. All three of these relations tend to operate in the direction of producing the observed relations among average charges.

It should be emphasized that the average charges per person recorded here do not measure the total per-capita costs of medical care; they measure only the average costs incurred by the individual or by the family. Costs for the medical care which is supplied by official agencies through the use of tax funds, by philanthropic organizations, etc., are not included in these items. Nor are loss in wages and similar items included. The costs presented in these chapters embrace only the direct charges incurred in the purchase of medical service or commodities for individuals.

In the average costs per family presented above are included not only the charges incurred for all individuals in each family, but also the charges for such joint items as purchases for the family medicine chest, lodge dues for family medical care, etc. In consequence, the average charge per person computed from the average charge per family is $2 larger than the average charge per person computed from the records for individuals—$24.58 per person as against $22.58 per person.

THE COSTS OF MEDICAL CARE FOR THE FAMILIES OF THE UNITED STATES

From the data presented above it is possible by simple extrapolations to estimate the costs of medical care purchased by the people of the United States. The 9,000 surveyed families were presumably representative of white persons and Mexicans residing in the United States who are members of families of at least two persons each. If we assume that the data are also substantially applicable to single persons of these groups,* the average cost figures may be applied to the 110,300,000 white persons (and Mexicans) in the population of 1930. With a per-capita cost of $24.58 (weighted average for all income classes) for medical obligations incurred by direct purchase of services or commodities, the total annual cost for this fraction of the population may be estimated at $2,711,000,000. Assuming that the average cost among negroes and other colored groups is the same as among persons in families with incomes of less than $2,000 living in large cities and in small towns and rural areas, the total cost for this fraction of the population becomes $185,000,000. The total for the entire population is then $2,896,000,000, equivalent to $23.58 per capita.

This computation leads to the conclusion that the private purchase of medical care by the people of the United States involves the annual expenditure of 2.9 billions of dollars. The computation involves a number of assumptions which cannot be accurately verified. But it leads to a result which is strikingly in accord with an entirely independent estimate, because when the gross incomes of physicians, dentists, nurses, etc., in private practice are added to the incomes of hospitals, clinics and drug stores from private patients (see Table 1), they lead to the same figure for the annual direct expenditure of the people, namely 2.9 billions of dollars. Thus, the fact that the recorded expenditures of representative families lead to an estimate which agrees with the recorded income (from patients' fees) of practitioners and institutions adds reliance to both sets of data and to the general estimates of the nation's medical bill.

The estimated per-capita cost of medical care purchased by individuals can be divided into its constituent fractions by those in the lowest income group; in medium-sized cities their charges are over 15 times as high; and in rural areas about 10 times as large.

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* The validity of this assumption may be illustrated by the following line of argument: (1) single persons consist chiefly of young adults and a far smaller number of old adults; (2) the average cost of medical care is much smaller for the former than for the latter (see Appendix Table 5-A); (3) weighting these two factors tends to give an average cost for single persons which is not significantly different from the average for members of families of two and more persons each.

It is interesting to speculate on the meaning of these relations. First, it should be recalled that the size of family is larger in the lower than in the higher income brackets. Second, it will be seen later (Table 21) that the average charge per family remains substantially constant with increasing size of family among those families which have incomes of less than $5,000, and increases with increasing size of family only in the income levels $5,000 and over. Third, it will appear shortly (Table 22) that the percentage of persons who incur no charges or receive free care only, declines very markedly as we proceed from the lowest to the highest income classes. All three of these relations tend to operate in the direction of producing the observed relations among average charges.

It should be emphasized that the average charges per person recorded here do not measure the total per-capita costs of medical care; they measure only the average costs incurred by the individual or by the family. Costs for the medical care which is supplied by official agencies through the use of tax funds, by philanthropic organizations, etc., are not included in these items. Nor are loss in wages and similar items included. The costs presented in these chapters embrace only the direct charges incurred in the purchase of medical service or commodities for individuals.

In the average costs per family presented above are included not only the charges incurred for all individuals in each family, but also the charges for such joint items as purchases for the family medicine chest, lodge dues for family medical care, etc. In consequence, the average charge per person computed from the average charge per family is $2 larger than the average charge per person computed from the records for individuals—$24.58 per person as against $22.58 per person.

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This computation leads to the conclusion that the private purchase of medical care by the people of the United States involves the annual expenditure of 2.9 billions of dollars. The computation involves a number of assumptions which cannot be accurately verified. But it leads to a result which is strikingly in accord with an entirely independent estimate, because when the gross incomes of physicians, dentists, nurses, etc., in private practice are added to the incomes of hospitals, clinics and drug stores from private patients (see Table 1), they lead to the same figure for the annual direct expenditure of the people, namely 2.9 billions of dollars. Thus, the fact that the recorded expenditures of representative families lead to an estimate which agrees with the recorded income (from patients' fees) of practitioners and institutions adds reliance to both sets of data and to the general estimates of the nation's medical bill.

The estimated per-capita cost of medical care purchased by individuals can be divided into its constituent fractions by applying the same procedure used in its derivation. When this is done it is found that the per-capita cost of $23.58 has the following composition:

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* The validity of this assumption may be illustrated by the following line of argument: (1) single persons consist chiefly of young adults and a far smaller number of old adults; (2) the average cost of medical care is much smaller for the former than for the latter (see Appendix Table 5-A); (3) weighting these two factors tends to give an average cost for single persons which is not significantly different from the average for members of families of two and more persons each.

Service or Commodity	Per-Capita Expenditure
Physicians	$9.43
Dentists	4.29
Medicines	3.10
Hospitals	3.09
Nursing	1.89
Refractions and glasses	0.58
Secondary practitioners and cultists	0.51
All other	0.69
Total	$23.58

These figures represent the average *private* purchase of medical care by the people of the United States.

CHAPTER VI

VARIATIONS IN THE SIZE OF THE FAMILY BILL *

For the majority of families, medical bills present no serious problem. Except in the lowest income class, most families can probably meet the average charge for their income class with neither greater nor lesser difficulty than they encounter in meeting the costs of other items in their budgets. The case would rest here if the cost of medical care were, like the cost of food or like rent, a more or less fixed and regularly recurring item in the cost of living. But it is not such an item. The central problem with respect to the cost of medical care is rarely concerned with the ability of the family to meet the average cost. The difficulties are ordinarily concerned with the ability of a few families to pay for unusually frequent or unusually expensive illness—especially when illness strikes the wage-earner. An understanding of the costs of medical care must embrace knowledge of how much costs vary, how many families incur large or small obligations, and what fractions of the total costs fall upon small or large proportions of the families.

What causes variations in the total charge per family with respect to either income or community? It has been seen in earlier chapters that there are no very large differences in the incidence or severity of illness among the several income classes. But, it will be recalled, *within* each class there are wide variations in the incidence and frequency of illness and there are significant differences within each income class in the proportion of families receiving certain medical services and in the volume of care received.

The amount of money which the family has available to spend, its recognition of the need for care, the quality and quantity of care purchased, and the absence or occurrence of frequent or " high-cost " illnesses are responsible for variations in the costs of medical care.

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* We are indebted to Miss Margaret C. Klem for assistance in the preparation of this chapter

CHARGES IN VARIOUS GEOGRAPHICAL SECTIONS

In the Committee's survey among representative families the charges are found to vary in the major geographical sections of the country, but no one section seems to have consistently higher or lower charges than any other. For all income classes combined, the South shows the highest average charge in cities of 100,000 or more population, New England the highest for medium-sized cities and for small towns and rural areas. In New England, charges are higher in medium-sized cities than in large cities and in rural areas; in all other sections charges are higher in the larger than in the smaller communities.

SEASONAL VARIATIONS IN CHARGES FOR MEDICAL CARE

The incidence of morbidity varies with the season, and is nearly twice as great in the months of maximum incidence (December, January, and February) as in the months of minimum incidence (June, July, August, and September).

Inasmuch as most of the costs of medical care are due to medical attendance and to the purchase of institutional care or of commodities advised by medical attendants, it is significant that approximately the same percentage of the cases which begin in each calendar month receives medical attendance (the average for all months is 84 per cent). The average charge per case of illness (with known month of onset) is $18.16. The average is lower in the cold than in the warm seasons, principally because the minor respiratory diseases, especially frequent in the winter, involve costs which on the average are only $5.91 per case. As a consequence of these seasonal variations * the total charges for medical care show seasonal fluctuation; but the seasonality is not so striking in costs as in morbidity.

The tendency for the burden of costs to become most acute in the months when the incidence of illness is highest, is probably minimized by the postponement of the purchase of medical care (for non-acute illnesses and conditions) to a season of the year when the incidence of acute disease and the occurrence of urgent needs is smallest, and when vacations and

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* The details appear in Chapter XII of Publication No. 26, listed at the end of this volume.

leisure make voluntary disability (as for "elective" surgical operations) most convenient.

All things considered, when the charges are allocated by the month of onset of the illness, the financial obligations incurred for medical care may be one and one-half times as great in one month (February) as in another (November). This must be kept in mind in any discussion of the family's ability or capacity to budget the costs of medical care.

VARIATIONS IN CHARGES AMONG FAMILIES

The variations which occur in the size of the family's medical bill are summarized in Table 20. The average charge in the lowest income class is $49, and about 75 per cent of the families have charges of less than this amount; the average in the highest income class is $503, and about 67 per cent of the

TABLE 20

THE VARIATION IN FAMILY CHARGES

Percentage Distribution of Families in Different Income Groups According to Total Charges for Medical Care; Based on Data for 8,581 White Families With Known Income, Surveyed for Twelve Consecutive Months 1928-1931([a])

Income Group	Average Charge	Per Cent of Families Whose Total Annual Charges Were in the Specified Ranges									
		Under $10	$10-$20	$20-$40	$40-$60	$60-$100	$100-$200	$200-$500	$500-$1,000	$1,000 and Over	Total
Under $1,200	$49.17	30.7	18.1	20.2	10.4	9.9	5.9	3.8	0.9	0.1	100.0
$1,200-2,000...	66.81	18.9	15.5	20.2	14.3	13.0	11.0	6.0	0.9	0.2	100.0
$2,000-3,000...	94.84	12.9	12.3	17.5	11.7	16.2	16.8	10.4	2.0	0.2	100.0
$3,000-5,000...	137.92	8.6	8.1	12.9	10.7	17.3	23.3	14.7	3.6	0.8	100.0
$5,000-10,000..	249.35	3.1	5.3	12.1	7.5	12.5	23.6	23.3	9.6	3.0	100.0
$10,000 and over	503.19	1.2	1.4	6.9	2.2	4.1	26.1	25.3	16.1	16.7	100.0
All incomes([b])	$108.14	15.9	12.8	17.4	11.7	13.7	14.9	9.9	2.7	1.0	100.0

(a) Excludes 58 families with unknown total charges.

(b) For all income classes combined the proportions of families in the several classes have been adjusted to the income distribution shown in Appendix Table 1-A.

families have charges of less than this amount. Although the average charge for all families is $108, nearly 30 per cent of the families (all income classes combined) have annual charges of $100 or more. In the lowest income class 11 families in each 100 and in the highest income class 84 in each 100 incur charges of $100 or more.

A considerable proportion of all families incur little or no financial obligation for medical care, many incur obligations which are somewhat more or less than the average, and a remaining fraction of appreciable size incurs obligations which are not only larger than the average, but may be many times the average. The financial burdens of these uneven costs are probably quite dissimilar for the poor and for the rich.

TABLE 21

MEDICAL CHARGES IN FAMILIES OF VARIOUS SIZES

Average Charge per Family for Medical Care According to Number in the Family; Based on Data for 8,581 White Families With Known Income and Known Total Charges, Surveyed for Twelve Consecutive Months, 1928-1931

Number in the Family	Average Charge per Family in Specified Income Groups(a)					
	Under $1,200	$1,200-$2,000	$2,000-$3,000	$3,000-$5,000	$5,000-and Over	All Incomes(b)
1–2	$46.09	$74.39	$100.07	$125.91	$208.73	$ 97.99
3	46.82	63.39	85.42	131.50	298.60	100.61
4	63.11	67.07	92.71	145.95	297.91	108.33
5	44.61	63.57	104.15	132.21	336.92	108.78
6–7	41.88	67.77	96.42	145.94	470.51	123.54
8 and over	46.30	66.84	96.40	143.62	473.57	123.81
All	$49.17	$66.81	$94.84	$137.92	$325.50	$108.14

(a) Averages in each size-of-family class are based on proportion of families adjusted to the size-of-community standard specified in Appendix Table 1-A.
(b) Adjusted according to the income standard specified in Appendix Table 1-A.

Size of Family and Variations in Medical Charges.—Among families with incomes of $5,000 and more the average charge per family is correlated with the size of family: the larger the family the larger the bill. But this relation is found only among families with incomes in excess of $5,000! (See Table 21). Apparently when the income is less than $5,000, only a small amount is squeezed from the budget for medical care, and this amount is more or less fixed regardless of the size of the family. These families spend a particular fraction of their budget for medical care; nor do they spend more if the family is large or less if it is small. The only apparent effect of family size is that it determines how many persons the average medical charge must cover. Obviously, among families with incomes of less than $5,000, the average charge incurred per person is less the larger the family.

VARIATIONS AMONG PERSONS

In a general population group (all income classes combined in appropriate proportions) over 38 per cent of the individuals receive no medical care during the year and make no expenditures for drugs or medicines (Table 22). The total charges for medical care purchased by individuals and families are therefore incurred for only 62 per cent of the population. Over 4 per cent of the individuals receive nothing but free care, 37 per cent incur charges of less than $20, 15 per cent between $20 and $100, and 5 per cent $100 and more. The

TABLE 22

VARIATIONS IN CHARGES PER PERSON

Percentage Distribution of Persons According to Total Charges for Medical Care; Based on Data for 38,427 White Persons in 8,639 Families With Known Income, Surveyed for Twelve Consecutive Months, 1928-1931(a)

Charges	Per Cent of Persons in Specified Income Groups						
	Under $1,200	$1,200–$2,000	$2,000–$3,000	$3,000–$5,000	$5,000–$10,000	$10,000 and Over	All Incomes(b)
No care and no charges	47.1	42.5	37.5	33.6	24.6	13.9	38.4
Free care only	8.2	5.1	3.1	2.4	1.6	0.3	4.3
Under $10	28.3	30.0	29.0	25.7	19.8	12.4	27.6
$10–$20	6.0	8.6	10.3	12.0	14.0	12.1	9.6
20– 40	5.3	6.1	8.3	10.1	14.1	13.7	7.9
40– 60	2.1	2.8	3.8	5.2	6.5	9.0	3.8
60–100	1.5	2.3	3.4	4.3	7.2	12.0	3.4
100–200	0.7	1.5	2.7	3.8	6.3	12.5	2.7
200–500	0.7	0.9	1.7	2.3	4.3	9.3	1.8
500 and over	0.1	0.2	0.2	0.6	1.6	4.8	0.5

(a) Excludes 241 persons with unknown total charges.
(b) Totals are based on proportions adjusted to the income standard given in Appendix Table 1-A.

amount of the medical bill and the number of persons having both care and charges vary considerably with income. The persons who receive no care and incur no charges constitute almost one-half of the population in the lowest income group, but are less than 14 per cent of those in the highest income group. The percentage of individuals who receive only free care declines from 8.2 in the lowest to 0.3 in the highest income class. That there are any at all in this category in the upper economic levels is due mainly to experiences in which professional courtesy dictates that no charges are made, or to the experiences of individuals who receive the little care they do only from philanthropic or tax-supported agencies. Inspection of the table will show that in the low income classes relatively few individuals incur charges in the upper charge brackets; in the high income classes, relatively more are in the upper charge brackets and fewer are in the lower.

The number of those who receive care, and who share in the total charges for medical care, is also influenced by the size of the community of residence. From 35 to 36 per cent of persons in large and middle-sized cities receive no care and incur no charges, as compared with 41.5 per cent in rural areas. When, in addition, account is taken of those who receive only free care, the charges are restricted to about 61 per cent of the persons in urban areas and to 53 per cent in rural areas. Consequently, the difference in the proportion of individuals who share the medical charges in cities and in rural areas is about 8 per cent. There is also difference in the percentage of persons incurring the higher charges; in large cities, 7.6 per cent of the individuals have charges of $100 or more, in comparison with 5.2 per cent in middle-sized cities, and 3.3 in rural areas. Those having charges of $100 or more among families with incomes of $5,000 to $10,000 constitute 13.3 per cent in the largest cities, 14.0 per cent in middle-sized cities, and 8.8 per cent in rural areas. Among the families with incomes under $1,200 the corresponding figures are 2.8 per cent of the individuals in large cities, 0.8 per cent in middle-sized cities, and 1.4 in rural areas.

Considered together, these analyses indicate two broad conclusions with respect to variations in charges among individuals: the higher the family income or the larger the community, (1) the larger the fraction of the population to whom the charges apply and, (2) the greater the frequency of individuals with charges in the upper charge brackets.

AGE AND SEX AND VARIATIONS IN CHARGES

The incidence of morbidity is high in the first years of life, minimal in the ages 15 to 19, and increases with the advancing years of adult life (see Fig. 9). The average charges for medical care fall along a curve which is only partly similar: the charges are lowest in the first year of life when morbidity has the highest incidence, and they are highest in the most advanced ages of life (Appendix Table 5-A). Persons under 20 years of age have charges less than the average; of those over 20, the age group 25 to 34 has charges about one-third again as high as the average, and those 65 and over have charges twice as high as the average.

Inasmuch as the average charge for all ages combined * varies from $9.28 per person in the poorest to $114.97 per person in the wealthiest families, it is not surprising that the age curves for charges move upwards with income class. In addition to the fact that the average charges in each age are larger the higher the income, the average charges increase even more disproportionately in the adult years in the highest income class. Young adult life receives extensive or expensive medical attention only among the rich; for persons in the most advanced years of life financial obligations for medical care are incurred among families in moderate and good circumstances, but not among the poor.

The incidence of illness is substantially the same among males and females in the first fifteen years of life; after 15 years of age the female rate always exceeds the male rate, and the excess is proportionally greatest in the age period 20 to 24 when the female rate is nearly twice the male rate (see Fig. 10). By comparison, the average charges for medical care up to age 10 are slightly higher among males than among females (Table 23); in the ages 10 to 14 the charges are nearly the same, but in all later ages the charges are higher for females than for males, the excess reaching a maximum in the ages

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* These figures for all ages combined do not correspond with those in Table 19 because persons of unknown age and sex and those born during the survey year are included there and excluded here.

25 to 34 when the average charge per female person is 2.8 times the average charge per male person. It seems not improbable that the excess charges for females in the ages 20 to 44 are to an appreciable extent associated with the medical costs for childbearing, and this interpretation is supported by the fact that 24.3 per cent of all charges for females in these ages and 14.9 per cent in all ages are due to confinements, abortions, and miscarriages.

TABLE 23

THE AVERAGE CHARGE BY AGE AND SEX

Based on Data for 37,766 White Persons in 8,639 Families With Known Income, Surveyed for Twelve Consecutive Months, 1928-1931

Age in Years(a)	Average Charge per Person(b)		
	Males	Females	Both Sexes(c)
All ages(d):			
Crude	$17.43	$27.55	$22.42
Adjusted(e)	18.19	29.06	23.55
Under 1	12.88	10.67	11.80
Under 5	12.64	11.87	12.26
5–9	16.69	14.40	15.56
10–14	14.23	14.56	14.39
15–19	14.88	19.07	16.98
20–24	15.28	33.16	24.36
25–34	15.32	43.20	29.33
35–44	17.59	37.34	27.18
45–64	22.16	32.63	27.19
65 and over	43.04	46.80	44.92

(a) Age at the beginning of the survey year.
(b) All data have been adjusted for proportions in the several income and community cla (see Appendix Table 1-A).
(c) Weighted for proportions of males and females in the United States population of 1930.
(d) Excludes persons of unknown age and those born during the survey year.
(e) Adjusted on the basis of age proportions among white persons in the United States in 1930.

These variations among charges with respect to age and sex obtain not only for all persons but for those in high and low income classes and in large and small places of residence.

THE CAUSES OF ILLNESS AND VARIATIONS IN THE COSTS OF MEDICAL CARE

In Chapter III the causes of illness were considered to indicate the major conditions which are responsible for disability and for the creation of a need for medical care. Now they may be reconsidered to make evident the conditions which are principally responsible for the costs of medical care.

When the diagnosis groups are arranged in sequence according to their responsibility for total charges, it is found that the first 14 titles account for more than 70 per cent of the costs of medical care and the first 20 for more than 80 per cent (Table 24). Care of the teeth exceeds all other specific

TABLE 24

MEDICAL CARE FOR THE MOST EXPENSIVE CAUSES OF ILLNESS

Based on Data for 39,183 White Persons in 8,758 Families, Surveyed for Twelve Consecutive Months, 1928-1931

Titles marked with an asterisk (*) also appear in a list of the most frequent causes, and taken together with immunizations (4.4 per cent), measles (1.9 per cent), and whooping cough (1.5 per cent), account for 80.7 per cent of all cases.

Diagnosis	Total Charges	Average Charge per Case	Per Cent of Total Charges	Cumulative Per Cent of Total Charges	Per Cent of Total Cases
*Care of the teeth	$188,473	$18.59	20.4	20.4	20.7
*Confinement, abortions, and miscarriages	84,555	95.01	9.2	29.6	1.8
*Minor respiratory	66,764	5.91	7.2	36.8	23.2
Appendicitis	53,316	167.66	5.8	42.6	0.7
*All accidents and accidental injuries	50,331	18.07	5.4	48.0	5.8
*Tonsil and adenoid operations	38,656	47.37	4.2	52.2	1.7
*Care of the eyes	34,409	17.33	3.7	55.9	4.0
Non-venereal diseases of the female genito-urinary system(a)	30,273	63.20	3.3	59.2	1.0
Diseases of the heart and arteries	22,709	49.56	2.5	61.7	0.9
*Diseases of the ear and mastoid process	21,530	30.20	2.3	64.0	1.5
Diseases of the kidney, bladder, and annexa	20,048	39.94	2.2	66.2	1.1
*Common disturbance of the digestive tract	16,843	6.89	1.8	68.0	5.0
Diseases of the gall bladder	16,285	79.83	1.8	69.8	0.4
Cancer	16,051	341.51	1.7	71.5	0.1
*All diseases of the skin and cellular tissue	15,645	11.10	1.7	73.2	2.9
Pneumonia	15,501	58.72	1.7	74.9	0.5
Sinusitis	13,889	39.23	1.5	76.4	0.7
Hernia and intestinal obstruction	13,172	131.72	1.4	77.8	0.2
Rheumatism	11,810	30.52	1.3	79.1	0.8
*Health and check-up examinations	10,179	3.27	1.1	80.2	6.3

(a) Other than diseases of the kidneys, bladder, and annexa.

categories, and is responsible for 20.4 per cent of the total family charges *; and the average charge per case is $18.59. Next in importance are confinements which constitute only 1.8 per cent of the total cases but are responsible for 9.2 per cent of the total charges. The average charge per case was $95.01.† Minor respiratory diseases cost only $5.91 per case, so that though they constituted 23.2 per cent of all cases they are responsible for only 7.2 per cent of the total charges. The average charge per case of illness may be as large as $342 (cancer) and in individual cases—rather than in averages—may exceed $1,000 or $2,000.

The drain of medical charges upon the family purse is of two quite different kinds: (1) the costs of frequent and comparatively inexpensive illnesses or medical needs; (2) the occasional occurrence of the so-called " high-cost illness." The difference is of fundamental importance for the family. The occasional or even frequent incidence of minor illness and comparatively small costs for medical care may be easily and complacently absorbed in the family budget; but the occurrence of a " high-cost illness," even if only rare, may be a financial catastrophe for the family of small or modest means.

SEVERITY OF ILLNESS AND THE COSTS OF MEDICAL CARE

If charges for dental and eye services in cases which were without illness are substracted from the total bill, the residuum is approximately the total incurred for illness. How much of this remainder is spent for non-disabling illness? How much for disabling illness? How much for hospitalized illness?

When the costs of medical care are examined with respect to the severity of illness (Table 25), the two most significant observations are, first, that hospitalized illness consumes 50 per cent of the total bill, and, second, that this proportion obtains without important variation in all income classes. In the charges for hospitalized illness are included not only the

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* Exclusive of charges for medicines not purchased in connection with any specific illness or medical case.

† In a study of 390 maternity cases (" The Cost of Obstetric Service to Berkeley Mothers," by Dr. Richard Arthur Bolt, *Journal of the American Medical Association*, May 17, 1930, Vol. 94, p. 1561-1565) it was found that the average charge per maternity case was $206.07. The charges included all costs from the beginning of prenatal care until discharge by the physician, usually between 4 and 6 weeks after confinement. Of the total deliveries, 85.6 per cent occurred in hospitals, and, of the hospitalized cases, 181 were in private rooms and 121 in the ward.

charges for hospital care, but also the charges for professional and non-professional services, drugs and medicines, and any other charges incurred for the hospitalized case. *

Of the remaining one-half of the total bill, 17.5 per cent goes for non-disabling illness, a scant 4 per cent for disabling illness which does not confine the patient to bed, and 29 per cent for illness which involves resort to bed at home. When these items are examined for the proportions of the bill which they consume in each income class, it is found that non-disabling illness accounts for a larger fraction of the total and disabling illness for a smaller fraction in the higher than in the lower income classes. Nor is this surprising when it is recalled † that the

TABLE 25

THE COSTS OF DISABLING AND NON-DISABLING ILLNESS

Percentage Distribution of Charges According to Disability and Hospitalization in Families With Various Incomes; Based on Data for 36,958 Cases of Illness in 8,639 White Families With Known Income, Surveyed for Twelve Consecutive Months, 1928-1931(a)

Type of Case	Per Cent of Total Charges per Annum in Families With Specified Income						
	Under $1,200	$1,200–$2,000	$2,000–$3,000	$3,000–$5,000	$5,000–$10,000	$10,000 and Over	All(b)
All types	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Non-disabling	14.7	16.7	16.7	20.1	21.4	23.2	17.5
Disabling but not confined to bed	6.6	3.5	3.7	3.6	1.6	1.6	3.8
Confined to bed but not hospitalized	30.5	32.1	27.6	27.2	25.0	19.7	29.1
Hospitalized	48.2	47.7	52.0	49.1	52.0	55.5	49.6
Ambulatory	21.3	20.2	20.4	23.7	23.0	24.8	21.3
Disabling but not hospitalized	37.1	35.6	31.3	30.8	26.6	21.3	32.9
All disabling	85.3	83.3	83.3	79.9	78.6	76.8	82.5
All cases confined to bed	78.7	79.8	79.6	76.3	77.0	75.2	78.7

(a) Includes all health examinations and all immunizations; where illness is involved dental and eye cases are included.

(b) Totals are based on proportions of families adjusted to the income standard given in Appendix Table 1-A.

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* A "hospitalized case" is an illness which involves hospitalization at any time during its course.

† See Publication No. 26, listed at the end of this volume.

principal reason for higher morbidity rates in the upper income levels than in the lower is due to the reporting of more nondisabling illness, and especially of more cases which involve preventive and prophylactic services. With these minor exceptions, the composition of the total bill is the same in all income classes, despite the fact that the total increases more than tenfold from the poorest to the wealthiest families.

The Costs of Hospitalized Illness.—The costs of hospitalized illness constitute such a large fraction of the total medical bill that they deserve special attention. The average total charge for all hospitalized cases combined is $139; it increases from $67 among families with incomes of less than $1,200 to $470 among those with $10,000 and more. Some people are accustomed to think that hospital charges are responsible for the high cost of hospitalized illness, but this is only partly correct. The bill for hospital care (Table 26) accounts for only 46 per cent of the bill for hospitalized illness in the lowest income class, and for even less (32 per cent) in the highest in-

TABLE 26

COMPOSITION OF THE BILL FOR HOSPITALIZED CASES

Based on Data for 2,370 Hospitalized Cases With Known Total Charge in 8,639 White Families With Known Income, Surveyed for Twelve Consecutive Months, 1928-1931

Family Income	Number of Cases(a)	Average Total Charge	Per Cent of Total Charge Incurred For:			
			Hospital	Physician(b)	Special Nurse in Hospital	All Other(c)
Under $1,200	347	$ 67.39	46.1	43.5	5.0	5.4
$1,200- 2,000	716	102.51	40.8	45.8	6.8	6.6
2,000- 3,000	577	140.08	38.6	47.3	7.4	6.7
3,000- 5,000	319	167.86	33.6	42.2	8.5	15.7
5,000-10,000	283	265.40	31.7	43.5	13.2	11.6
10,000 and over	128	469.91	32.3	49.5	9.3	8.9
All incomes(d)	2,370	$139.14	39.0	45.2	7.5	8.3

(a) Includes cases hospitalized less than one day.
(b) Includes cost of surgery and all calls by private practitioner or specialist.
(c) Includes cost of medicines, nursing service outside the hospital, etc.
(d) Totals are based on proportions of families adjusted to the income standard given in Appendix Table 1-A.

come class. Of course, the total average charge of a hospitalized case is larger in the higher than in the lower income class, and 32 per cent of the average bill for hospitalized illness in a wealthy family represents a larger actual charge ($152) than 46 per cent of the average bill for a poor family ($31).

Charges for physicians' services account for 42 to 50 per cent of the bill for hospitalized illness, and charges for special nurses in the hospital constitute an additional 5 to 13 per cent of the total.

TABLE 27

COMPOSITION OF THE BILL FOR SURGICAL CASES HOSPITALIZED

Based on Data for 1,501 Cases With Known Total Charge in 8,639 White Families With Known Income, Surveyed for Twelve Consecutive Months, 1928-1931

Family Income	Number of Cases(a)	Average Total Charge	Per Cent of Total Charge Incurred For:			
			Hospital	Surgery(b)	Special Nurse in Hospital	All Other(c)
Under $1,200	197	$ 81.07	40.8	47.8	6.7	4.7
$1,200- 2,000	439	119.46	35.8	50.0	8.8	5.4
2,000- 3,000	380	156.27	33.2	47.1	8.4	11.3
3,000- 5,000	202	165.82	30.8	48.3	8.1	12.8
5,000-10,000	195	258.97	27.8	44.4	13.8	14.0
10,000 and over	88	469.18	31.0	46.1	18.4	4.5
All incomes(d)	1,501	$150.21	34.4	48.2	8.9	8.5

(a) Includes cases hospitalized less than one day.

(b) Includes all charges for surgery, whether performed by a general practitioner or specialist.

(c) Includes cost of medicines, nursing outside the hospital, etc. Also includes charges for services other than surgery by general practitioners and specialists.

(d) Totals are based on proportions of families adjusted to the income standard given in Appendix Table 1-A.

Both the average charges and the composition of the bills for hospitalized cases which involved surgery are substantially the same as for all hospitalized cases (Table 27), though the actual charges increase sixfold from the lowest to the highest income. The average is $150 for all families and ranges from $81 in the lowest income class to $469 in the highest. The hospital fraction of the average total bill may be from 28 to 41 per cent, the professional charges for surgery constitute from 44 to 50 per cent, special nursing is responsible for 7 to 18 per cent, and all other services for 5 to 14 per cent.

In a study of 10,000 hospitalized full-pay patients made by John A. McNamara and James S. Parker * it was found that the average stay was 11.04 days and the average hospital charge $72. The hospitals studied were all located in cities of 25,000 to 100,000 population and did not include Catholic hospitals, public, or semi-public hospitals.

C. J. Cummings and Matthew O. Foley † found in a study of the bills to 100 consecutive hospital patients who made some payment toward their hospital bills, regardless of the amount, that the average length of stay was 8.81 days. The expenses covered only the period from the admission to the discharge of the patient and did not include such items as extra expenses in the home incurred because of the illness, doctors' fees before or after hospitalization, or nursing outside the hospital. The average charge per case was $140, of which 43.5 per cent was for hospital care, 51.5 per cent for physicians' fees, and 5 per cent for special nursing. If all expenses incurred in connection with the illness had been included, the average charge per case would have been higher and the percentage of the total due to hospital charges would probably have been even closer to that found in the Committee's study.

THE RECEIPT OF CARE AND VARIATIONS IN THE TOTAL CHARGES

Variations in the amount and kinds of care received bring variations in the charges incurred for medical care, and consequently unequal financial burdens. Among families with small or with large total annual charges, how many receive service from physicians, hospitals, nurses, or dentists, and how do the proportions vary with the size of the family's bill? Among families with small or large charges, what percentage of the bill is due to services from each major group of practitioners or institutions and how do these proportions vary with the size of the bill?

A tabulation showing for each of four broad income classes the types of services utilized by the families whose total

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* "What 10,000 Patients Actually Paid in 100 Hospitals; A Study of 100 Bills in 100 Hospitals," by John A. McNamara and James S. Parker, *The Modern Hospital,* January, 1930, Vol. XXXIV, p. 59.

† "What 100 Consecutive Patients Paid Hospital, Doctor and Nurse," by C. J. Cummings and Matthew O. Foley, *Hospital Management,* February, 1932, Vol. XXXIII, p. 19.

TABLE 28

COMPOSITION OF LARGE AND SMALL MEDICAL BILLS

Per Cent of the Total Bill Charged for Specified Services in Families With Various Incomes, Based on Data for 8,581 White Families, Surveyed for Twelve Consecutive Months, 1928-1931(a)

Total Charge per Family	Family Income				Family Income				Family Income			
	Under $2,000	$2,000–$3,000	$3,000–$5,000	$5,000 and Over	Under $2,000	$2,000–$3,000	$3,000–$5,000	$5,000 and Over	Under $2,000	$2,000–$3,000	$3,000–$5,000	$5,000 and Over
	Physician				Hospital				Nursing			
Under $40	41.0	35.3	33.7	29.5	1.4	0.3	0.5	0.6	0.3	0.1	0.0	0.0
$ 40– 60	44.7	43.3	40.1	38.1	3.3	2.0	0.4	(b)	0.7	0.2	1.0	0.0
60– 100	45.1	43.3	41.9	37.2	7.2	4.2	2.8	0.9	2.4	1.2	0.2	(c)
100– 200	43.6	43.3	39.6	36.9	14.0	10.9	6.4	5.2	2.8	2.9	2.5	1.6
200– 300	47.6	43.3	39.4	34.5	21.2	17.3	18.3	7.3	3.5	2.7	4.4	2.8
300– 500	46.5	43.4	40.8	35.9	25.5	21.0	14.6	9.5	8.8	7.4	7.5	6.6
500– 1,000	38.5	38.5	42.1	36.5	32.3	25.2	15.2	12.6	12.0	14.5	11.2	10.4
1,000 and over	33.2	8.2	30.0	36.1	38.7	62.9	25.0	16.5	13.8	18.6	32.1	26.2
	Dentistry				Medicines				All Other			
Under $40	12.6	19.0	19.7	23.5	39.2	39.6	39.2	40.0	5.5	5.7	6.9	6.4
$ 40– 60	18.0	21.3	25.5	29.5	25.8	26.2	25.7	26.5	7.5	7.0	7.3	5.9
60– 100	16.6	22.9	25.1	33.4	20.3	21.3	23.0	20.5	8.4	7.1	7.0	8.0
100– 200	17.4	22.0	28.0	32.4	14.3	13.7	15.1	15.7	7.9	7.2	8.4	8.2
200– 300	9.8	20.2	22.0	34.5	10.2	10.0	11.0	11.4	7.7	6.5	4.9	9.5
300– 500	6.7	12.6	21.0	32.6	6.5	8.4	8.6	9.2	6.0	7.2	7.5	6.2
500– 1,000	6.0	7.4	14.9	26.2	5.2	7.4	7.1	6.8	6.0	7.0	9.5	7.5
1,000 and over	0.1	2.4	1.4	12.6	2.1	2.1	1.9	4.2	12.1	5.8	9.6	4.4

(a) This tabulation excludes 58 families with unknown total charges.
(b) One family with unknown charge.
(c) Less than 0.1 per cent.

charges were of small, moderate, or large size indicates first, that many of the families which had comparatively small total charges (under $40 or $40 to $60) received some service from physicians, but only very few received any hospital or nursing care; second, of the families whose total charges were comparatively high ($100 and over) nearly all received service from physicians, many or most were served by hospitals, and from one-fourth to four-fifths obtained nursing care.

These findings must be interpreted to mean that families may receive physicians' services and still have comparatively small total charges; but, if they experience illness which requires hospital or nursing care, their total medical bills will be comparatively large.

We may now ask, what percentage of the family's total bill is due to each major type of service when the total bill is large or small? In each income class, physicians' charges are a substantially constant fraction of the total bill, regardless of the actual size of the total (Table 28). The hospital charges are negligible fractions of the family's total bill when this is less than $100; when the total exceeds $200, hospital charges generally equal 15 to 40 per cent of the total. Similarly, nursing is responsible for less than 10 per cent until the total for a family exceeds $500; but then it may become 10 to 32 per cent. Conversely, in each income class dentistry and medicines comprise smaller fractions of the total family bill the larger the magnitude of the bill.

Any one of the five main types of medical service may contribute significantly to the size of the family's bill; but in most cases if a family has a total bill appreciably in excess of the average for the income class, the family has had illness or medical need which entailed the services of physicians, hospital, or nurse, or two of these, or all three.

CHAPTER VII

THE UNEVEN BURDEN OF MEDICAL COSTS [*]

The majority of families have only moderate bills for medical care; in a sample of the general population nearly 60 per cent have annual charges of less than $60 (Table 29) and incur only 18 per cent of the total medical bill for the entire group. Thirty-two per cent of the families have charges of $60 to $250, and the sum of their charges is 41 per cent of the total bill. Only 10 per cent of the families have charges of $250 and more, but the sum of their charges is 41 per cent of the total bill.

If all families shared the costs of medical care equally, the charge to each would be $108. As it is, at one extreme 58 in every 100 families have average charges of $24, and at the other about 4 in every 100 have average charges of $804. The uneven distribution of the total medical bill is perhaps shown more strikingly by Fig. 24. There the sectors of the concentric circles show the contrast between the percentage of the families which have charges of a specified magnitude and the percentage of the total charge they bear.

The studies of the United States Bureau of Labor Statistics [†] and those of the Metropolitan Life Insurance Company [‡] similarly show the uneven distribution of medical expenditures. The available data from other studies have been summarized by Michael M. Davis in his recent book *Paying Your Sickness Bills*.[§]

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[*] We are indebted to Miss Margaret C. Klem for assistance in the preparation of this chapter.

[†] *Cost of Living in the United States*, United States Bureau of Labor Statistics (United States Government Printing Office, Washington, D. C., 1924), p. 444-453. "Cost of Medical Service," United States Bureau of Labor Statistics, *Monthly Labor Review*, May, 1928, Vol. XVI, p. 885-888.

[‡] Lee K. Frankel and Louis I. Dublin, *Extent and Cost of Sickness: A Survey Among the Office Employees of the Metropolitan Life Insurance Company* (New York), p. 8. (Unpublished.) Lee K. Frankel, *Cost of Medical Care* (Metropolitan Life Insurance Company, New York, 1930). Donald B. Armstrong, *A Study of Sickness Cost and Private Medical Practice* (Metropolitan Life Insurance Company, New York, 1932, 15 pp.). *A Study of the Cost of Medical Care Among the Families of Employees of the Metropolitan Life Insurance Company*. (In preparation.)

[§] Michael M. Davis, *Paying Your Sickness Bills* (University of Chicago Press, 1932).

TABLE 29

CHARGES AND THE FAMILIES WHICH INCUR THEM: CONSIDERED BY INCOME

Based on Data for 8,581 White Families With Known Total Charges and Known Income, Surveyed for Twelve Consecutive Months, 1928-1931(a)

Total Annual Charges per Family	Per Cent of Families and of Charges for Families With Specified Income													
	Under $1,200		$1,200–$2,000		$2,000–$3,000		$3,000–$5,000		$5,000–$10,000		$10,000 and Over		All Incomes(b)	
	Families	Charges	Families	Charges	Families	Charges	Families	Charges	Families	Charges	Families	Charges	Families	Charges
Under $60......	79.5	31.3	68.9	23.6	54.4	14.1	40.2	8.0	27.9	3.3	11.7	0.7	57.8	17.9
$ 60– 100......	9.9	15.5	12.9	14.7	16.2	13.4	17.4	9.7	12.5	3.9	4.1	0.6	13.7	12.5
100– 250......	7.1	22.3	13.0	29.3	20.6	33.9	28.3	31.6	29.6	19.1	33.7	12.1	18.2	28.4
250– 500......	2.5	17.8	4.0	19.5	6.6	23.0	9.7	24.8	17.3	24.3	17.7	12.3	6.6	21.1
500 and over...	1.0	13.1	1.2	12.9	2.2	15.6	4.4	25.9	12.7	49.4	32.8	74.3	3.7	20.1
All charges......	100.0	100.0	100 0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Excludes 58 families with unknown charges.
(b) Totals are based on proportions of families adjusted to the income standard given in Appendix Table 1-A.

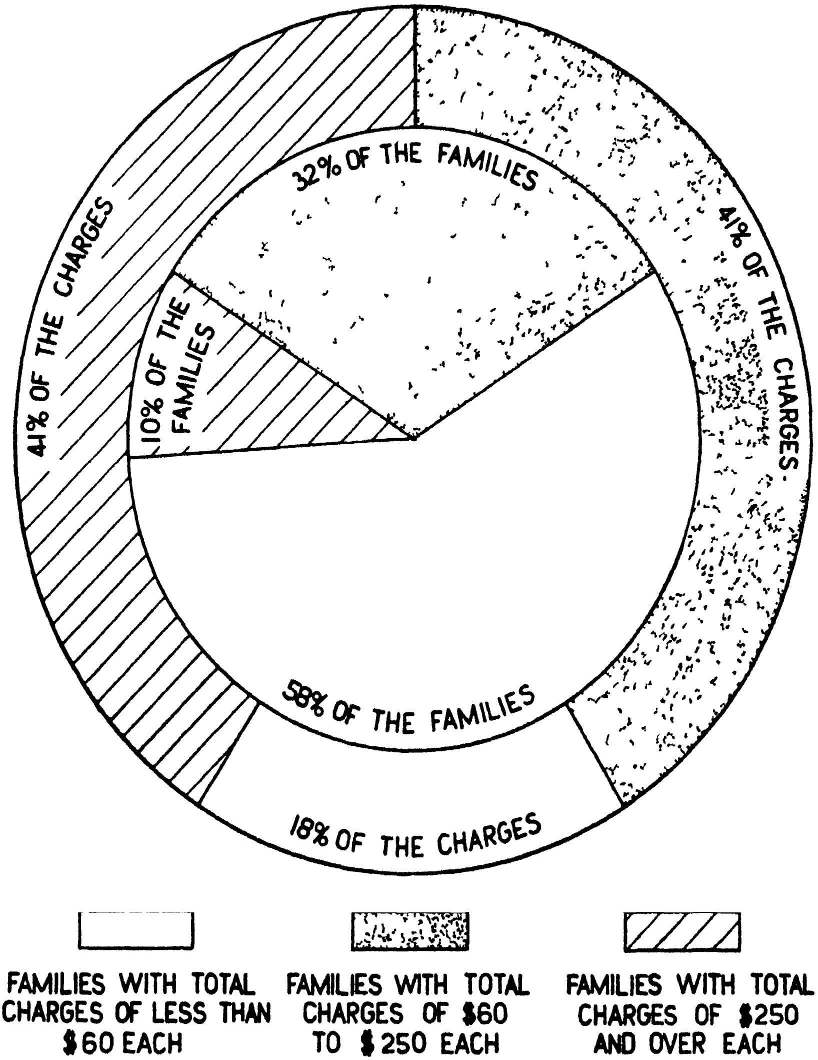

FIG 24 CHARGES AND THE FAMILIES WHICH INCUR THEM

The inner circle is divided to show the percentage of families which incur total charges of less than $60 per family, $60 to $250, or $250 and over The outer circle is divided to show the percentage of all charges incurred by the corresponding groups of families.

charges are less.) The uneven distribution of the total bill appears most extreme for the families with the largest total charges ($500 and over). In the large cities, the 6 per cent of the families, each with charges of $500 or more, are charged 27 per cent of the total bill; in the middle-sized cities, the 4 per cent with these charges incur 19 per cent of the total charges; in rural areas the 2 per cent with these charges incur 17 per cent of the total amount.

VARIATIONS AMONG INDIVIDUALS

The costs of medical care must, in the last analysis, be considered from the standpoint of the family budget; but it is significant to observe the distribution of charges with respect to individuals, rather than families. It may be recalled that about 57 per cent of individuals either report no illness or report illness and receive no medical care,* and about 43 per cent incur no charges.† It is not surprising, therefore, that of the total charges for medical care, 7 per cent is incurred for the 70 per cent of the persons whose individual charges are less than $10; 41 per cent of the total is incurred for the 25 per cent whose charges fall between $10 and $100; and 52 per cent is charged for the 5 per cent of the population whose costs are $100 and over per person.

These findings with respect to the fractions of the population for which the costs of medical care are incurred are presented graphically in Fig. 25 for all persons in a general population group.‡

The uneven distribution of the charges is even more pronounced in certain income classes than in all combined. Among the poorest families, 93 per cent of the people (with charges of $30 or less per person) incur 30 per cent of the total bill; 5.4 per cent (with charges of $30 to $100) incur 31 per cent of the bill; and 1.4 per cent (with charges of $100 and more) incur 39 per cent of the bill. Among the wealthiest families, 22 per cent of the persons had charges between $100 and $500 each, and the sum of their bills equals 39 per cent of the total

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* Exclusive of the purchase of drugs and medicines. (See Fig. 18 in Publication No. 26, listed at the end of this volume.)

† See Table 22 in this volume.

‡ All income classes and all sizes of communities combined in weighted proportions.

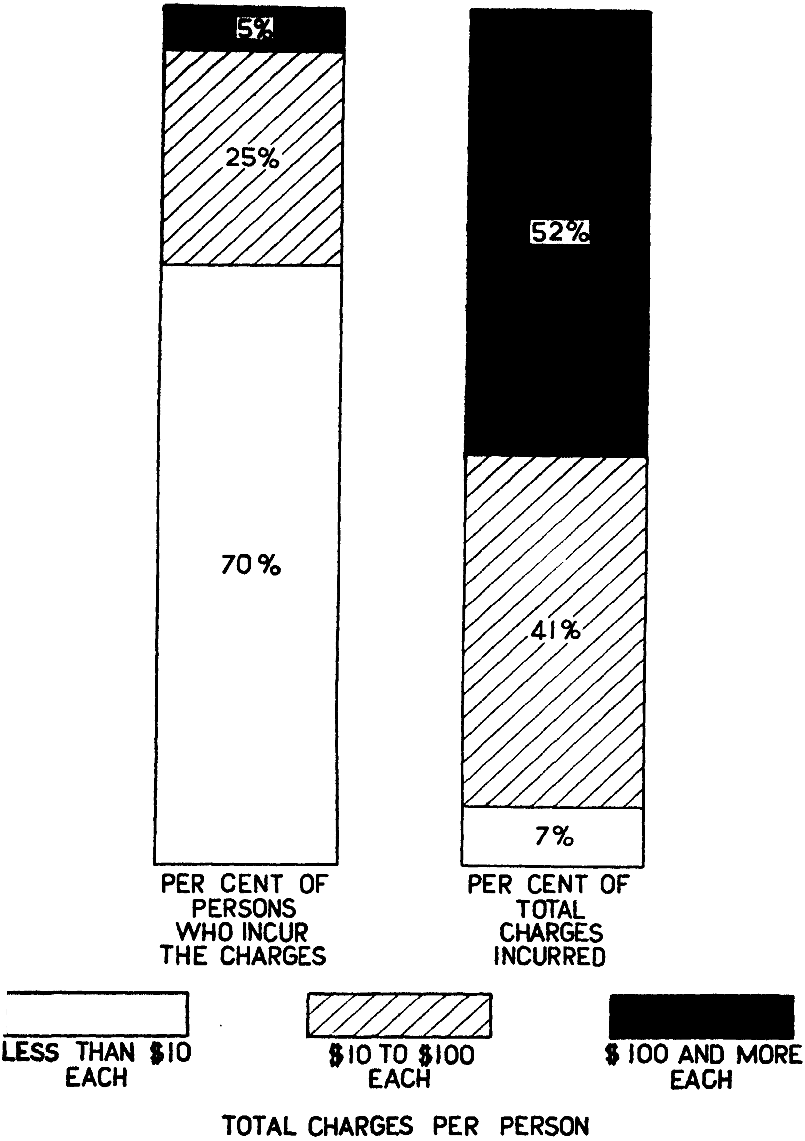

FIG. 25. CHARGES AND THE PERSONS FOR WHOM THEY ARE INCURRED

The bar at the left shows the percentage of all persons for whom charges of less than $10, $10 to $100, or $100 and more are incurred. The bar at the right shows the percentage of total charges which are incurred for the persons with the specified charges.

charges for the income class; 4.8 per cent of the individuals had charges of $500 and more, and 43 per cent of the total bill was incurred for them.*

THE UNEQUAL PAYMENT OF LARGE AND SMALL TOTAL BILLS

Expenditures more nearly approximate charges in the higher than in the lower income classes, but there are differences within each income class in the ratios of expenditures to charges among families with different total charges. Among families whose total charges are under $40, the expenditures in a typical year are almost uniformly in excess of the charges incurred in that year, regardless of whether their incomes are low or high (Table 31). In other words, the families with small current bills are not only paying these, but are also paying off old bills. With total charges of $40 to $100, the families in the upper income brackets are spending for medical care as much as, or more than, their current charges; but those in the lower brackets show expenditures which are somewhat less than current charges. With total charges higher than $100, expenditures are not uncommonly less than charges; and the difference between the two is greater in the lower than in the higher income classes. The poor as well as the rich spend as much as they are charged if their charges are low. In families in which the charges are high, the poor, more than the rich, spend less than they are charged. Those who are well-to-do show expenditures equal to charges, whether their total charges are low or high.

These relations obtain in quite exactly the same manner among families in large-, middle-, and small-sized communities, and apparently describe the common state of affairs. Nonpayment of medical bills is more extensive among poor than among wealthy families. And, of course, from the point of view of the practitioners who serve these families the difference may be of even greater importance. The physician, hospital, dentist, or nurse, whose patients are on the whole in good financial circumstances, do not suffer seriously from nonpayment of bills; those serving the lower economic class may

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* For further details, see Appendix Table B-54 in Publication No. 26, listed at the end of this volume.

TABLE 31

THE PAYMENT OF MEDICAL BILLS

The Ratio of Expenditures to Charges for Families Having Various Total Charges; Based on Data for 8,581 White Families With Known Income, Surveyed for Twelve Consecutive Months, 1928-1931([a])

The Family's Annual Charges	Under $2,000			$2,000-$3,000			$3,000-$5,000			$5,000 and Over		
	Cities 100,000 and Over	Cities 5,000 to 100,000	Towns and Rural Areas	Cities 100,000 and Over	Cities 5,000 to 100,000	Towns and Rural Areas	Cities 100,000 and Over	Cities 5,000 to 100,000	Towns and Rural Areas	Cities 100,000 and Over	Cities 5,000 to 100,000	Towns and Rural Areas
Under $40	122.8	107.6	102.2	101.9	105.0	114.8	101.6	99.4	100.6	99.8	102.6	103.3
$ 40- 60	112.9	97.1	97.0	106.3	97.9	97.6	98.4	102.9	99.6	100.0	100.0	109.2
60- 100	91.2	96.4	92.3	103.1	99.6	97.0	99.2	105.0	101.4	112.4	100.7	100.0
100- 200	89.4	89.1	90.8	94.0	96.5	96.9	103.5	96.4	93.2	100.4	99.6	116.2
200- 300	87.6	87.1	89.2	91.0	85.3	94.4	95.6	97.3	100.7	99.2	99.7	99.3
300- 500	86.9	81.9	83.2	89.3	84.4	89.8	93.9	98.4	99.5	98.9	99.4	99.9
500- 1,000	75.3	88.6	94.3	89.6	100.2	104.3	91.6	97.7	101.7	100.4	98.6	100.0
1,000 and over	100.0	53.0	86.5	100.0	.....	100.0	94.0	100.0	87.9	97.7	101.4	100.0

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[a] Excludes 58 families whose total charges were unknown.

suffer trebly—(1) because non-payment is more extensive among the poor; (2) because the practitioner or agency may not have a sufficient number of patients in better circumstances upon whom to pass the load in the form of charges based on a higher scale of fees; and (3) the burden of so-called "free care" is large.

THE RESPONSIBILITY OF THE PRINCIPAL MEDICAL SERVICES FOR VARIATIONS IN CHARGES *

The analysis has indicated that the principal problem in the costs of medical care is their uneven and uncertain distribution among families. Now we may ask: To what extent is the unevenness of the distribution caused by the charges for each type of medical service? If the problem is to be viewed with the intention of providing a solution, responsibility must be apportioned among the factors which create it.

The principal items in the medical bill are the charges for physician, dentist, hospital, nurse, and medicines. It has been found that in each income class the charges are widely uneven among families for the first four of these five. Gross inequalities in the total charges may, therefore, be due to inequalities in the costs for any one of these or for various combinations of two or more.

To provide a quantitative analysis of the problem, tabulations were made to ascertain: (*a*) to what extent each major item in the total medical bill influences the variations in costs among families; and (*b*) to what extent total variations are reduced or eliminated if the charges for each type of service are in turn spread over the entire group instead of bearing upon the particular families which incur them.

The complexity of the analysis and of the results which it produces, compelled restriction of the tabulations to selected groups of families. Those in cities of 5,000 to 100,000 persons were chosen because their charges fall between those of families in large cities and those in small towns and rural areas. Three income groups were studied—those with $1,200 to $2,000; $3,000 to $5,000; and $5,000 to $10,000—to represent, respectively, poor families above the level of dependency, families of moderate means, and families which are well-to-do.

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* Only a brief summary of the analysis is presented here. For details consult Chapter XVI of Publication No. 26, listed at the end of this volume.

The method followed in the tabulations was to subtract from the total bill of each family the actual amount charged for a specified service and to substitute the average charge for that service to all families in the income class. The procedure may be illustrated as follows:

A. (1) Family X in the income class $1,200 to $2,000 had a total annual bill for medical care amounting to $87; (2) charges for services received from physicians amounted to $26; (3) the average charge for physicians' services was $31 for all families in this income class; (4) $26 was replaced by $31 and the total bill for the family was increased from $87 to $92.

B. (1) Family Y in the same income class incurred total charges of $200; (2) physicians' charges amounted to $110; (3) substituting the average charge for physicians' services ($31) for the actual charge ($110), decreased the family's total charges from $200 to $121.

In other words, each family is presumed to have a total charge such as it might have had if it had been paying for physicians' services on an insurance basis. The same procedure was followed for other types of services and then for certain combinations of services. Finally, the computations were carried out for families in the two other selected income classes.

Families With Incomes of $1,200 to $2,000.—The average charge for all medical care among these families was $69 per annum. This total included: $31 for the services of physicians, $10 for dentistry, $9 for hospital care, $2 for nursing, and $17 for medicines and all other charges. In their experiences, 79.6 per cent of these families had total charges of less than $100 and their average total charge was $36; 20.4 per cent had charges of $100 or more each and together carried 59.4 per cent of the financial burden for all families in this income class. If physicians had been remunerated on an insurance basis for the services which these families received, each family would have paid $31. The effect of substituting an average charge for actual charges upon the variation in total charges among the families is shown in Table 32. Instead of 79.6 per cent of the families with charges of less than $100 each, there would have been 83.7 per cent. Instead of 20.4 per cent of the families with charges of $100 and more bearing 59.4 per cent of the total costs, there would have been only 16.3 per cent of the families with these charges and they would have borne only 38.6 per cent of the total costs. Instead of 30 per cent of the families having charges between $40 and $100 there would have been 55.7 per cent in this class. Thus, eliminating such variations in total costs as are due to variations in the costs of physicians' services has somewhat reduced the variations in the total costs. But many families still have charges which are considerably less than or greater than the average for the income class ($69) and those with large charges still bear a disproportionately large fraction of the total charges.

TABLE 32

SUMMARY OF RESIDUAL VARIATIONS AFTER SUBSTITUTING AVERAGE FOR ACTUAL CHARGES FOR SPECIFIED SERVICES AMONG FAMILIES WITH INCOMES OF $1,200 TO $2,000

Based on Data for 590 White Families Living in Cities with 5,000 to 100,000 Persons, Surveyed for Twelve Consecutive Months, 1928-1931

Services for Which Average Charges are Substituted	Residual Charges of Less than $100		Residual Charges of $100 and More		Per Cent of Families With Residual Total Charges Between $40 and $100
	Per Cent of Families	Average Charge for All Medical Items	Per Cent of Families	Per Cent of Total Bill They Still Bear	
None	79.6	$36	20.4	59.4	30.0
Physician	83.7	51	16.3	38.6	55.7
Physician plus dentist	87.1	56	12.9	29.3	87.1
Hospital	80.3	42	19.7	51.1	38.4
Hospital plus nurse	80.0	43	20.0	49.7	40.5
Physician plus hospital	85.5	57	14.5	30.0	85.5
Physican plus hospital plus nurse	87.1	59	12.9	26.7	87.1
Physican plus hospital plus nurse plus dentist	91.7	65	8.3	15.5	91.7
All services for hospitalized illness	80.5	$51	19.5	42.1	53.0

Similarly, when average charges are substituted for actual charges for physician plus dentist (3d line in Table 32), for hospital (4th line), for hospital plus nurse (5th line), for physician plus hospital (6th line), etc., the successive substitutions effect, in various degree, an elimination of the variations in charges.

Even casual inspection of the table will reveal that the substitution of average for actual charges effects only small or partial elimination of the uneven burden of costs except when the substitutions apply to all four of the principal items of medical service—physician, dentist, hospital, and nurse.

The effectiveness of the substitutions may be measured by the percentage of the families whose total charges are brought under $100, if it be assumed that in an income class whose average charge for medical care is $69 the variation in charges is inconsequential when the total charge does not exceed $100. Before any substitutions were made, 79.6 per cent of the families had charges of $100 and less. When average charges are substituted for actual charges incurred for the services of hospital or for hospital plus nurse, practically no changes result. Slight changes are effected when the services of physician, physician plus hospital, physician plus dentist, or physician plus hospital plus nurse are averaged. Only when the charges for all four major types of service are averaged are more than 90 per cent of the families given charges of $100 or less. The 20.4 per cent of the families with charges in excess of $100 originally bore 59.5 per cent of the total charges. As the progressive substitutions are made, the families which still are left with total charges in excess of $100 bear progressively a smaller and smaller fraction of the total. When the costs for the four services are averaged, the 8.3 per cent of the families left with charges in excess of $100 bear only 15.5 per cent of the total charges.

The average charge for all medical care among these families was $69. Substituting average for actual charges for the four types of service has brought 91.7 per cent of the families within the charge range of $40 to $100, and these 91.7 per cent of the families bear the burden of 84.5 per cent of the charges. There remain no families with charges of less than $40, and only 8.3 per cent of the families have charges in excess of $100. The families whose total charges are between $40 and $100 have an annual average charge of $65 for all medical care. In other words, the substitution of average for actual charges for four types of service has brought 91.7 per cent of the families to an average annual charge substantially the same as the average charge for all families, and leaves less than one family in ten to incur a charge appreciably in excess of the average charge for all families. (See Fig. 26.)

It will be recalled that approximately 50 per cent of the total costs of medical care incurred by the family are due to illnesses which involve hospitalization.* Inasmuch as hospitalized illnesses are commonly "high-cost illnesses," it may be anticipated that they are in very large measure responsible for variations in the total costs of medical care. It is therefore of special interest to observe (in the last line of Table 32) the effect of substituting average for actual charges incurred for hospitalized illness, especially because there are many informed persons who consider insurance for this class of illness a

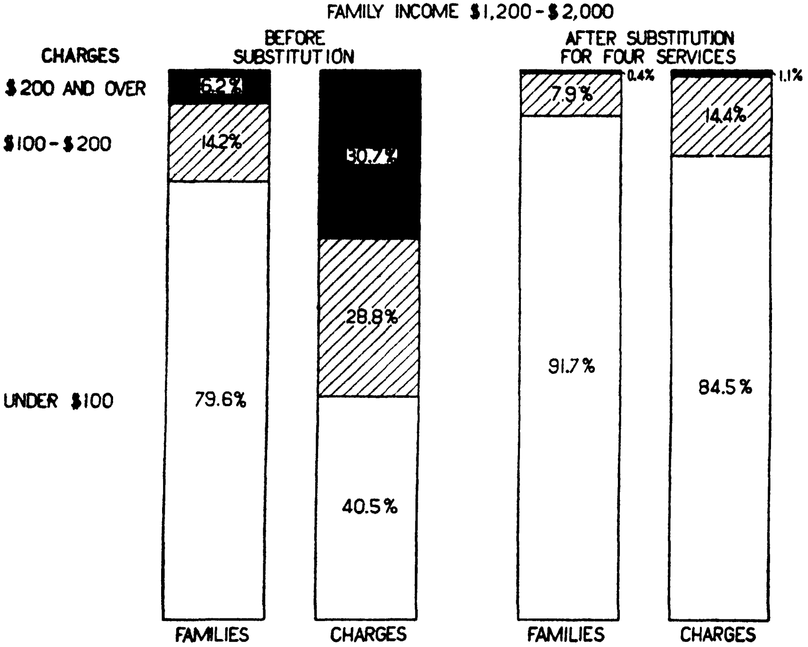

FIG. 26. EFFECT OF SUBSTITUTING AVERAGE FOR ACTUAL CHARGES AMONG FAMILIES WITH INCOMES OF $1,200 TO $2,000 IN CITIES OF 5,000 TO 100,000

Charges and the families which incur them before and after substituting average for actual charges for four services (physician, dentist, hospital, and nurse).

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* The 50 per cent includes not only hospital charges but all other charges (professional services, medicines, etc.) incurred for the illnesses which involve hospitalization.

practical procedure. It will be noted in the table that eliminating variations due to the costs of hospitalized illness changes very little the percentage of families with charges of less than or more than $100 and increases only from 30 to 53 per cent the families whose charges fall between $40 and $100.

Why, if hospitalized illness is responsible for 50 per cent of the total costs, does eliminating variations due to this item change so little the variations among families? The answer to the paradox lies in the fact that only 20 per cent of families utilize the services of a hospital in a typical year. Insurance for illness which involved hospitalization might be of large significance for those particular families whose members had high-cost hospitalized illnesses; but it would apply to only a very small fraction of the surveyed families; it could therefore change only a little the general unevenness of the burden of medical costs; and it could affect only those whose " high-cost illnesses " involved hospitalization.

In order to eliminate nearly all the unevenness in the burden of medical costs for families with incomes of $1,200 to $2,000, it has been necessary to substitute average for actual charges for four of the five main types of medical service. This leads to the conclusion that the responsibility for variation in charges is diffuse among these services. It leads to the further conclusion that no substantial solution of the problem of variations can be effected for all the families in this income class unless the variations due to four main types of service are eliminated.

Families With Incomes of $3,000 to $5,000.—The average charge for all medical care for these families is $132. Approximately one-third incur charges which are less than one-third the average and this fraction bears less than 5 per cent of the charges for the group. Nearly 10 per cent have charges between $40 and $60; larger proportions have charges between $60 and $100 and between $100 and $200; and 18 per cent have charges in excess of $200. The families with small total charges bear a very small fraction of the total; those with high total charges bear disproportionately large fractions.

Inasmuch as the average charge for all families in this class was $132, it was arbitrarily determined that the effect of substituting average for actual charges in eliminating variations would be measured by the percentage of families left with charges of $200 or more and the percentage of the total charges they still bear. When the average charges for physician, or hospital, or hospital plus nurse are substituted for the actual charges, approximately 15 per cent of the families are still left with charges of $200 or more. When the average charges for physician plus dentist, or physician plus hospital are substituted, a smaller percentage of families (10 or 12 per cent) have charges of $200 or more, but it is not until substitution is made for three services (physician plus hospital plus nurse) that less than 10 per cent remain in this charge group. The substitution which includes all four services results in leaving only 3.4 per cent of the families with charges of $200 or more. (See Fig. 27.)

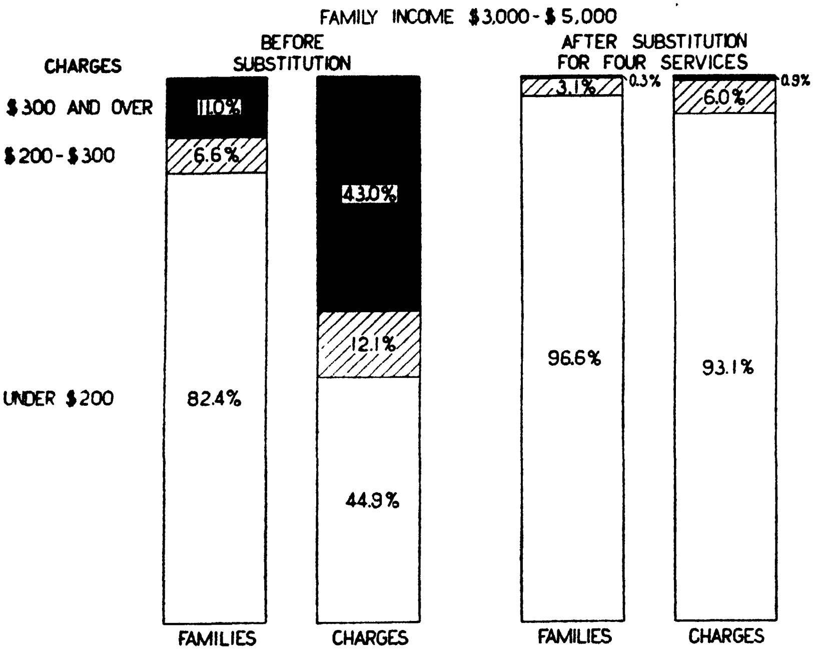

FIG. 27. EFFECT OF SUBSTITUTING AVERAGE FOR ACTUAL CHARGES AMONG FAMILIES WITH INCOMES OF $3,000 TO $5,000 IN CITIES OF 5,000 TO 100,000

Charges and the families which incur them before and after substituting average for actual charges for four services (physician, dentist, hospital, and nurse).

The percentage of families with total charges between $100 and $200 (the range which embraces the average charge, $132) has been increased from 25.5 to 96.6 by the substitutions for the four principal medical services (Table 33). Short of substituting average for actual charges for four types of services, no other substitution brings as many as 50 per cent of the families within the range $100 to $200. Nor is this result effected by substituting average for actual charges for hospitalized illness. For families in this income class it must, therefore, be concluded that the responsibility for variations in charges is broadly distributed among the principal types of medical service. If the objective is the inclusion of a maximum proportion of the families in the range of $100 to $200 for total charges, eliminating variations in charges due to one, two, or three types of service fails to solve so much as half of the problem. Responsibility for variations in charges is so

TABLE 33

SUMMARY OF RESIDUAL VARIATIONS AFTER SUBSTITUTING AVERAGE FOR ACTUAL CHARGES FOR SPECIFIED SERVICES AMONG FAMILIES WITH INCOMES OF $3,000 TO $5,000

Based on Data for 302 White Families Living in Cities With 5,000 to 100,000 Persons, Surveyed for Twelve Consecutive Months, 1928-1931

Services for Which Average Charges are Substituted	Residual Charges of Less Than $200		Residual Charges of $200 and More		Per Cent of Families With Residual Total Charges Between $100 and $200
	Per Cent of Families	Average Charge for All Medical Items	Per Cent of Families	Per Cent of Total Bill They Still Bear	
None	82.5	$72	17.5	55.0	25.5
Physician	85.3	94	14.7	36.6	31.4
Physician plus dentist	89.9	106	10.1	24.6	38.7
Hospital	84.6	81	15.4	45.3	29.6
Hospital plus nurse	84.7	88	15.3	40.8	33.7
Physician plus hospital	88.5	103	11.5	27.6	37.9
Physician plus hospital plus nurse	90.6	109	9.4	22.1	45.3
Physician plus hospital plus nurse plus dentist	96.6	122	3.4	6.9	96.6
All services for hospitalized illness	85.6	$99	14.4	36.2	35.9

diffuse among the principal types of medical care that variations are not substantially eliminated unless they are eliminated from all four.

Families With Incomes of $5,000 to $10,000.—Variation in the total charges and in the percentage of total charges which various fractions of the families bear is substantially the same here as was the case among those with lower incomes. The only important difference is that relatively fewer of the families have small charges and more have larger charges.

Following for these families the procedures described for families with incomes of $1,200 to $2,000, gives the results which are summarized in Table 34. The substitution of average for actual charges incurred for physicians' services or for physicians' and dentists' services, or for hospital services, or for hospital and nursing services, for physicians' and hospital services, or for physicians', hospital, and nurses' services effects various reductions in variations in charges. The last of these has considerably narrowed the range of total charges within which all families fall: none has total charges of less than $100 and none has total charges in excess of $1,000. There have been great reductions in the disparity between the percentage of families which have total charges of any particular size and the fraction of the financial load which they must bear. However, it is not until the substitution of average for actual charges has included all four of the principal medical services that the variation in charges and in the burden of charges has been substantially eliminated. When the substitution includes all four, 81 per cent of the families have total charges between $200 and $300, and they must bear 75.6 per cent of the total charges; 18.3 per cent have total charges between $300 and $500 and they must bear 22.8 per cent of the charges; 0.8 per cent of the families have charges between $500 and $1,000 and they must bear 1.6 per cent of the charges. No family has charges of less than $200 and none has charges of more than $1,000. The percentage of the total charges which the families bear is now strikingly similar to the percentage of the families which must bear them.

The average total charge for all families in this income class is $284. Accordingly, it is not unreasonable to assume that the effectiveness of the substitution procedure may be measured in terms of the percentage of families whose charges are brought below $500. Before any substitutions were made, 83.5 per cent of the families had charges of less than $500. This percentage is increased by each of the substitutions which has been made and finally attains the value 99.2 when the substitution embraces four services. When the average charges for physician, hospital, nurse, and dentist are substituted for the actual charges incurred for these services, only 0.8 per cent of the families are left with charges in excess of $500 (Table 34). The percentage of families with total charges between $200 and $500—the range which should include all families if variations were substantially eliminated—has been increased from 23.8 before any substitutions were made to 99.2 when the substitution includes four services. (See Fig. 28.)

TABLE 34

SUMMARY OF RESIDUAL VARIATIONS AFTER SUBSTITUTING AVERAGE FOR ACTUAL CHARGES FOR SPECIFIED SERVICES AMONG FAMILIES WITH INCOMES OF $5,000 TO $10,000

Based on 250 White Families Living in Cities With 5,000 to 100,000 Persons, Surveyed for Twelve Consecutive Months, 1928-1931

Services for Which Average Charges are Substituted	Residual Charges of Less Than $500		Residual Charges of $500 and More		Per Cent of Families With Residual Total Charges Between $200 and $500
	Per Cent of Families	Average Charge for All Medical Items	Per Cent of Families	Per Cent of Total Bill They Still Bear	
None	83.5	$148	16.5	57.5	23.8
Physician	89.5	212	10.5	31.8	36.0
Physician plus dentist	93.4	234	6.6	22.2	46.7
Hospital	86.5	174	13.5	44.9	27.8
Hospital plus nurse	88.2	201	11.8	34.4	35.5
Physician plus hospital	91.8	231	8.2	23.0	43.7
Physician plus hospital plus nurse	93.1	252	6.9	15.5	71.8
Physician plus hospital plus nurse plus dentist	99.2	278	0.8	1.6	99.2
All services for hospitalized illness	92.4	$252	7.6	21.8	55.8

Here, as was the case for lower income classes, variations in costs are only partly eliminated when less than the four types of important medical services are included in the family bill on an average rather than on an actual basis. The responsibility for variations in charges is broadly distributed among these types of service. Substituting average for actual charges for physicians' services, for physicians plus dentists, for hospital, for hospital plus nurse, or for physicians plus hospital fails to bring so many as 50 per cent of the families in the charge range $200 to $500. If the charges are to be brought within this range for more than 50 per cent of the families, variations in costs due to variations in the charges for physician, hospital, and nurse or for all hospitalized illness charges

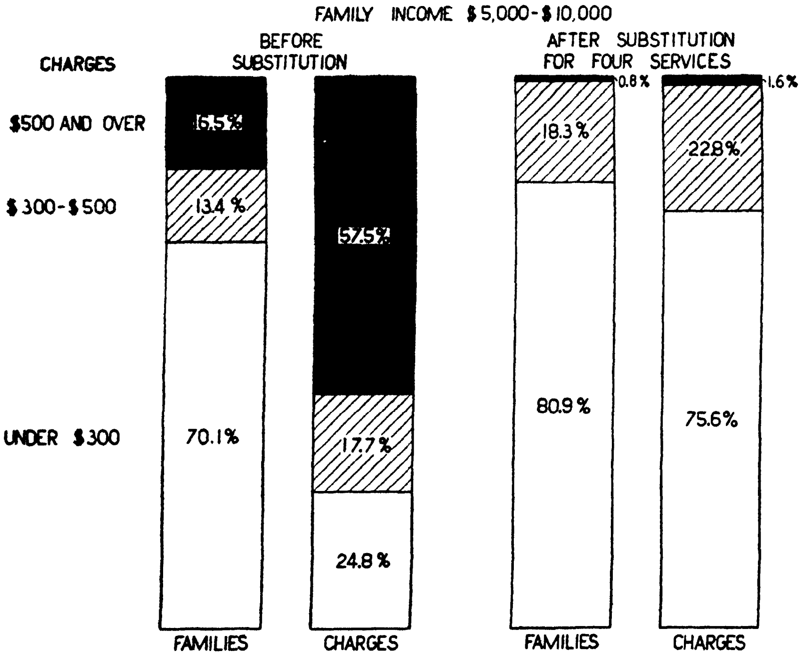

FIG. 28. EFFECT OF SUBSTITUTING AVERAGE FOR ACTUAL CHARGES AMONG FAMILIES WITH INCOMES OF $5,000 TO $10,000 IN CITIES OF 5,000 TO 100,000

Charges and the families which incur them before and after substituting average for actual charges for four services (physician, dentist, hospital, and nurse).

must be eliminated. Only when the variations due to all four types of charges are removed are practically 100 per cent of the families free from the likelihood of having charges of less than $200 or of more than $500.

Summary.—In earlier chapters there has appeared evidence that the responsibility for variations in the costs of medical care cannot be ascribed to the charges incurred for the services of the physician or of the hospital or of the dentist or of the nurse. It is now demonstrated that the responsibility for variation in the costs is a broad one and devolves from variations in the costs of all the principal types of service. This is another way of saying that variation in costs is due largely to variations in the need for medical care and in the kinds and amounts of services entailed by illness. Little wonder when people have complained against the size and the uncertainty of medical costs that physicians have alleged the responsibility lay with the hospital or the dentist or the nurse; that hospital authorities have alleged it lay with the physician, the dentist, or the nurse; and dentists and nurses have been equally confident it lay with the others. All are equally to blame and yet none is to blame. The responsibility rests upon factors inherent in the nature of all medical costs which can attain appreciable magnitudes.

The analysis summarized in this chapter was undertaken to ascertain by how much the total variations in costs are determined by the variations in the costs for each of the four main types of medical service. As a result, not only have the proportionate responsibilities been allocated, but the opportunities for elimination of variations have been quantitatively defined.

If the uncertainty of medical costs to all the families in a particular economic class or in all economic classes is to be eradicated, the uncertainty of medical costs for each responsible type of service must be eradicated. Application of the insurance principle (substitution of average for variable charges) obviously supplies the procedure. Whether it is technically desirable that the insurance principle should be applied to the costs of physicians' services, of hospital care, of nursing, or of dentistry is not germane at this point. Application of the principle to any one of these or to two or three will eliminate part of the uneven and uncertain character of the costs for all families which incur these costs. But this analysis demonstrates that the variations are not in general eliminated unless the application embraces all four of these principal types of service.*

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* In the tabulations presented in this chapter an insurance principle has been used for the purposes of the analysis. It does not follow, however, that the results of the computations can be used for actuarial purposes in anticipating costs under an insurance scheme. It was seen in Chapter IV that the receipt of medical care is less than the need and that this is more particularly true the lower the family income. The incidence of recognized illness, the volume of medical service, and the costs might (at least at first) all be increased if economic deterrents are removed; the recognition of the need for care and the demand for service in the lower income levels might, under an insurance scheme, attain the magnitudes recorded for those in the upper income levels. The data in the tables describe the past experience of the surveyed families; the data may be grossly in error if used to measure an anticipated experience of a population whose medical care is provided under some special organized scheme or is paid for in some particular fashion.

CHAPTER VIII

THE ABILITY TO PAY FOR MEDICAL CARE *

Medical care is necessary to life, health, and well-being. It is eminently desirable that it should be available to everyone. But like other services, medical care has its price and if it is to be procured, someone must pay—either he who receives it or someone else on his behalf. The question whether the people of this country are able to pay the price of reasonably adequate medical care is of great importance, and demands an answer before any comprehensive program can be formulated for the provision of more and better medical care than the majority of the people now receive.

The question of the ability to pay for medical care has two aspects. First, can people at present reasonably afford to pay the costs of the medical care which they now receive? Manifestly since these costs are now being paid, the inquiry becomes one of determining whether the financial burden is of such weight that complaint and resort to charity service are justified. Second, are people able to pay the cost of adequate medical care? It has been amply demonstrated in preceding chapters that many people do not now receive medical attention which is adequate to their needs in volume and quality. It is difficult to determine the smallest sum for which, on the average, adequate medical care can be furnished; nevertheless it seems certain that the cost of such care, even if it were provided in an efficient manner and with little or no waste, would represent sums greater than a large proportion of the people now spend for medical services.

There can be no categorical answer to these questions. It might be said that a person's ability to pay for medical care is measured by the extent of his financial margin over the bare cost of such food, clothing, and shelter as is necessary to keep him from perishing. This is true, but hardly useful. For medical care is not the most important thing in the world. The need for medical care is only one need among many. Accordingly

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* The material in this chapter is based largely upon Publication No. 25, listed at the end of this volume. We are indebted to Louis S. Reed, author of that report, for assistance in the preparation of this chapter.

the real question is: How much can people afford to spend for medical care in view of other pressing and important needs?

The ability to pay for medical care depends in part upon the method through which medical service is bought and paid for. Medical care may be purchased through individual payment, as is generally the procedure at present, or through various types of group payment.* The essential element of the latter form of payment is that individuals pay fixed sums into a common pool out of which the cost of care for all members of the group is defrayed. Their contributions may be equal as in insurance, or unequal as when the groups are made up of taxpayers. Under individual purchase, a person's ability to pay is determined by his resources or credit at the time; under group purchase, ability to pay is determined by the collective resources of the group.

Ability to pay will here be considered under four main heads: (1) the ability of people of different income levels to pay on an individual basis, (2) the ability of people of different income levels to pay on a group basis, (3) the ability of people of the various states, considered as units, to pay on a group basis, and (4) the ability of the entire nation considered as a single unit to meet the costs of medical care.

Discussion of these matters is limited to the consideration of data for the years 1928 and 1929. The necessary information is not available for later years; and since 1929 the country has plunged into a severe financial and industrial depression, with the consequence that the capacity to pay for all types of commodities has markedly declined. Since the conditions of these depression years are probably abnormal, the situation in 1928 and 1929 will provide a better indication of the capacity of people to pay for medical care in the years ahead.

THE ECONOMIC POSITION OF THE AMERICAN PEOPLE

The capacity of people to pay for medical care is dependent upon their incomes. In 1928 the total income of the American people was $89,419,000,000,† which represented an income of

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* More extended discussion of this subject than is germane here appears in Parts VII and VIII of this volume.

† Willford I. King, *The National Income and Its Purchasing Power* (Publication No. 15, National Bureau of Economic Research, Inc., New York, 1930).

$749 per person, $1,920 per wage-earner, and $3,105 per family. Average incomes per capita or per family are grossly misleading. Income is not equally distributed; in fact, it is distributed so unequally that a large majority have incomes below the average. This may be seen in Table 36 which shows the distribution of "census" families in 1928 according to the amount of their incomes.

There is good reason to believe that this estimate portrays a more even distribution of family income than was actually the case, and that there are more families with incomes below $1,000 than the distribution in the table indicates. Included in the families in this distribution are approximately 2,286,000 single individuals. If these individuals are excluded, it is estimated that of the 26,714,000 families in 1928, 13.4 per cent had incomes under $1,000, 19.7 per cent had incomes between $1,000 and $1,500, 20.1 per cent had incomes between $1,500 and $2,000, 22.1 per cent had incomes between $2,000 and $3,000, and 24.7 per cent had incomes over $3,000.

TABLE 36

ESTIMATED DISTRIBUTION OF FAMILIES ACCORDING TO AMOUNT OF ANNUAL INCOME, 1928(a)

1928 Income	Number of Families	Per Cent	Cumulative Per Cent
All incomes	29,000,000	100.0	.....
Under $1,000	4,060,000	14.0	14.0
$1,000– 1,200	2,117,000	7.3	21.3
1,200– 1,400	2,610,000	9.0	30.3
1,400– 1,600	2,784,000	9.6	39.9
1,600– 1,800	2,407,000	8.3	48.2
1,800– 2,000	2,059,000	7.1	55.3
2,000– 2,500	3,712,000	12.8	68.1
2,500– 3,000	2,523,000	8.7	76.8
3,000– 4,000	3,074,000	10.6	87.4
4,000– 5,000	986,000	3.4	90.8
5,000–10,000	1,885,000	6.5	97.3
10,000 and over	783,000	2.7	100.0

(a) Estimated by Dr. Maurice Leven. The families are census families and include approximately 2,286,000 households of one person. In addition to the families distributed here, there were in 1928 approximately 6,400,000 gainful workers outside the family units as designated by the census.

Distribution of Income by Geographical Sections.—Not only is income unevenly divided among individuals and families, but it is disproportionately distributed among the people living in various geographical sections. This may be illustrated by comparing the per-capita incomes of the people of the several sections of the country, as follows:

Geographical Section	Per-Capita Income 1926*
New England	$815
Middle Atlantic	1,039
East North Central	809
West North Central	541
South Atlantic	472
East South Central	369
West South Central	446
Mountain	583
Pacific	769
All United States	$735

It is apparent that the northeastern and Pacific coast sections of the country are, on the average, more prosperous than the rest of the country; and that, on the whole, the people of the southeastern states have the lowest income per capita. The four East South Central States—Kentucky, Tennessee, Alabama, and Mississippi—have, on the average, a per-capita income approximately one-half of that for the United States as a whole, and only about one-third as large as that which obtains in the Middle Atlantic States: New York, New Jersey, and Pennsylvania.

In 1919 the ten states with the lowest per-capita income were the following †:

State	1919 Per-Capita Income	1919 Income per Family
Alabama	$321	$1,492
Mississippi	328	1,466
Tennessee	346	1,568
Arkansas	352	1,590
North Carolina	367	1,843
Kentucky	378	1,684
Georgia	379	1,758
South Carolina	390	1,889
Virginia	407	1,959
Florida	408	1,715
All United States	$614	$2,763

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* Obtained by applying Copeland's indices of per-capita income in 1926 to Leven's estimates of per-capita income for 1919. *Recent Economic Changes*, Vol. 2, p. 818-888.

† Maurice Leven, *Income in the Various States* (Publication No. 7, National Bureau of Economic Research, Inc., New York, 1925, p. 260-1).

Although the 1926 income of these ten states is unknown, it is known that between 1919 and 1926 there was no important change in per-capita income in the geographical regions in which these states are located. In the West South Central section average per-capita income declined 5 per cent between 1919 and 1926. In the East South Central region, average income was 7 per cent higher in 1926 than in 1919, while in the South Atlantic region the 1926 per-capita income was 6 per cent larger in 1919. It may be assumed therefore that the 1926 per-capita and per-family income in these states would not be materially different from the 1919 figures shown in the tabulation above.

Furthermore, income is unevenly distributed not only for the country at large and for the broad geographical sections, but also according to the size of the community in which the families reside. Families with low incomes (less than $1,200 or $1,200 to $2,000) constitute larger proportions of those living in small urban and in rural places than of those in large cities; families with incomes in excess of $5,000 or of $10,000 are in small proportions everywhere, but more particularly in the smaller than in the larger communities.

It has been seen that the need for medical care is substantially the same for all persons—rich and poor, urban and rural. But from the foregoing it follows that the capacity to pay for medical care differs markedly in various sections of the country, in various states, and among families residing in large and small places. The residents of the more prosperous areas are able to afford expenditures for medical care which would be utterly beyond the resources of the people of Alabama, Mississippi, and other "poor" states, even if medical care were financed through a system of state-wide taxation to distribute the costs in proportion to individual wealth and income.

The Increase in Material Well-Being.—Previous to 1930 the income of the American people was increasing at the rate of 1 to 2 per cent a year. In the twenty years from 1909 through 1928, per-capita income (measured in 1913 dollars of constant purchasing power) increased from $346 to $452, a net increase of 30.6 per cent in average material well-being. Despite the halt in this economic progress brought about by the present depression, it may be reasonably assumed that in the decades ahead the average income may increase no less rapidly than in the twenty or thirty years previous to 1928. And this increase will expand the ability to meet the costs of medical care.

THE COST OF LIVING

The estimates of income given above show how much money people have to spend, but they do not tell what can be bought with this money. Inquiry may now be focussed upon what money will buy—upon the kind of "living" which families with specified incomes can purchase.

The Expenditures of the Nation as a Whole.—In Table 37 is set forth an estimate of the total expenditures of the American people in 1929. Not in absolute amounts but in relative size, these national expenditures afford evidence of the degree of national well-being. In 1929 approximately 17.8 per cent of the national income was spent for food, 17.1 per cent for rent (including the rental value of owned homes) and fuel, and 15.4 per cent for clothing and household furnishings and supplies. Approximately 11 per cent of the national income was saved. The remainder was used to buy things considered necessary and desirable in a civilization like our own. For the purchase and up-keep of private passenger automobiles the American people spent 7.9 billions of dollars. For non-business, railway, steamship, and similar types of travel they spent 1.6 billions of dollars, and for recreation of all sorts other than travel at least 3.4 billions. The amount spent for medical care is a significant item in the total. For this purpose individuals spent collectively a total of 3.1 billions and government units (federal, state, and local) expended another 509 millions of dollars. The sum of these health and sickness expenditures is more than three times the amount spent for the maintenance of churches and religious organizations and is greater by 200 million dollars than the total amount spent for education, private and public. On the other hand, expenditures for health are less by 1.2 billion dollars than the total spent for tobacco, liquor, candy, ice cream, and soft drinks.

It is evident at a glance that the American people are spending vast sums—in the aggregate, over 20 billions of dollars—for what may be called "optional consumption goods," that is, for

TABLE 37

AN ESTIMATE OF THE NATIONAL EXPENDITURES, 1929(a)

Item	Amount (in Millions)	Per Cent
Food, exclusive of candy, soft drinks, etc.(b)	$16,137	17.8
Rent (or rental value of owned houses)	13,060	14.3
Fuel, gas, electricity, and ice	2,573	2.8
Clothing	9,315	10.3
Household furnishings and supplies	4,594	5.1
Savings	10,000	11.0
Health (non-government expenditures)	3,068	3.4
Automobiles, purchase and upkeep	7,882	8.7
Street car, urban bus, commutation, and taxi fares	1,169	1.3
Travel, including luggage	1,593	1.8
Recreation, other than travel	3,420	3.8
Direct taxes	1,417	1.5
Newspapers, books, and magazines	888	0.9
Education, private, including textbooks	898	0.9
Tobacco	1,600	1.8
Liquor	1,740	1.9
Confectionery, ice cream, and soft drinks	1,474	1.6
Religion	992	1.1
Domestic service and tips	1,008	1.1
Toilet articles and services	1,078	1.2
Jewelry	596	0.7
Laundry, cleaning, shoe repair, etc	1,024	1.1
Postage, telephone, and telegraph	537	0.6
Death and burial expenses	380	0.4
All other	4,347	4.9
Total	$90,790	100.0
Imputed income from durable consumption goods other than houses	$3,100	
Grand total	$93,890	
Free services from governments(c):		
Education	$2,490	
Highways	1,937	
General government	1,051	
Protection	2,422	
Economic development	265	
Health(d)	509	
Social welfare other than health(d)	790	
Public utilities	796	
Miscellaneous	195	
Total	$10,455	

(a) For sources of these estimates, see Appendix B of Publication No. 25, listed at the end of this volume.

(b) Including value of food consumed on the farm.

(c) From National Industrial Conference Board, *The Cost of Government in the United States, 1929.*

(d) The Board's estimate of government expenditures for "social welfare" purposes was broken down into expenditure for "health" and "social welfare other than health" on the basis of estimates of government expenditure for "health" by the Committee staff.

commodities which serve to add pleasure, comfort, and grace to living but which are not absolutely essential for life. If the American people as a unit were persuaded that in order to be healthy it is necessary to spend more for medical care than at present, there is no lack of funds which might profitably be diverted to this purpose.

Factors Affecting National Expenditures.—It is worth remarking here upon a number of factors which affect the distribution of expenditures, including the expenditures for medical care. A very important influence upon the direction of national expenditures is the uneven distribution of national income, which tends to increase the proportion spent for nonessentials and luxuries. If income were equally apportioned in the population, a much larger share of the total would be spent for food, clothing, medical care, and other necessities. Another factor affecting expenditures is advertising. People buy what they desire, but they may be made to desire particular things. Business men are constantly endeavoring to influence spending habits. In 1929 approximately $1,500,000,000 was spent in this country for commercial advertising. For every dollar spent by consumers, 1.7 cents was spent by business houses in telling people what to buy and where to buy it. There can be no doubt that this tremendous volume of advertising has considerable weight in influencing people to spend their money as they do. How else may one explain the present expenditures for tobacco, toilet articles, patent medicines, and other similar extensively advertised commodities? The manufacturers of the country are continually pointing out to the public the benefits and virtues, real or imaginary, of their products. In contrast, the agencies concerned with providing medical care (except patent medicine manufacturers) have done little to advertise the worth of their services.

Another factor in promoting sales, somewhat akin to advertising, is installment selling. In recent years, according to estimates of the National Bureau of Economic Research, about 10 or 15 per cent of all retail sales have been made on the deferred payment plan. The practice of installment selling represents a definite effort on the part of sales agencies and manufacturers of articles of large unit price to bring their commodities within the means of people with low incomes, and thus to obtain the widest possible sales.

Another factor in the determination and control of expenditure is the public policy of government. It can forbid the sale and prohibit the consumption of certain commodities, such as alcoholic beverages and narcotics; but more important are the positive aspects of government control. By assuming practical control of education, the state has to a considerable extent removed expenditure for this item from the discretion of the individual. The majority has enforced its will on the minority. Whether a man wills it or no, he must through taxation pay along with others for the education of all the children in the community. It is altogether probable that in consequence much more money is available and is spent for education in this country than if each individual family " bought " as much or as little schooling for its children as it desired or was able to purchase. Taxation, like advertising and installment selling, may be viewed as a device which influences or controls expenditures. Unlike advertising, however, governments control expenditure presumably in the interests of social ends, not in the interests of bigger and better profits for the individual producer. The tremendous importance, both actual and potential, of tax-controlled expenditure may be seen in the fact that all told an amount equivalent to about one-ninth of the national income now passes through the administrative authorities of local, state, and national governments.

The Cost of Living to the Family.—How do families of various income levels spend their money, and what sort of " living " do they enjoy? A partial answer is supplied by Table 38 which gives a suggestion of the manner in which, on the average, urban families with total living expenses of various amounts, spend their money. The expenditures listed in this table represent a composite of the expenditures of various sample groups of families whose costs of living have been the object of special study.

The expenditures of the families with total living expenses of $1,000 merit special attention. The striking thing about the scale of living of families of this level, is the small leeway which their budget permits. Food will take perhaps 41 per cent of total expenses, shelter 24.5 per cent, and clothing 11 per cent. After small amounts are paid for household furnishings and equipment, families of this level will, in general, have in the neighborhood of $200 to spend for medical care, insurance, church, amusements, toilet articles and services, carfare, and all the other hundred and one things that people need and desire. Only an occasional urban family of this income level will possess an automobile. For amusements such families will spend perhaps 20 cents a week, for tobacco 20 to 25 cents a week, for newspapers, magazines, school tuition and supplies, about the same amount. In general, families of this income level living in cities, will live in crowded quarters, without a central heating system, and without a bathroom and modern plumbing.

TABLE 38

THE MANNER IN WHICH, ON THE AVERAGE, URBAN FAMILIES OF FOUR OR FIVE MEMBERS TEND TO DISTRIBUTE THEIR EXPENDITURES, 1928–1929 PRICE LEVEL

Item	Income $1,000		Income $1,500		Income $2,000		Income $3,000	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Total living expenses	$1,000	100.0	$1,500	100.0	$2,000	100.0	$3,000	100.0
Food	410	41.0	520	34.6	620	31.0	860	28.7
Shelter	245	24.5	400	26.7	550	22.5	760	25.3
Clothing	110	11.0	170	11.3	210	10.5	360	12.0
Household furnishings	35	3.5	55	3.7	70	3.5	120	4.0
Miscellaneous	200	20.0	355	23.7	550	27.5	900	30.0
Total miscellaneous expenses	$200	100.0	$355	100.0	$550	100.0	$900	100.0
Medical care	50	25.0	75	21.1	90	16.4	120	13.4
Insurance	30	15.0	65	18.3	95	17.3	140	15.6
Education and advancement	12	6.0	25	7.0	30	5.5	60	6.7
Church, charity, and clubs	15	7.5	20	5.6	35	6.4	70	7.8
Automobile	20	10.0	60	16.9	120	21.8	200	22.2
Travel and vacation	4	2.0	8	2.3	15	2.7	20	2.2
Amusements	10	5.0	14	4.0	25	4.5	110	12.2
Tobacco	12	6.0	16	4.5	20	3.6	30	3.3
Telephone	7	3.5	10	2.8	20	3.6	30	3.3
Toilet articles and services	10	5.0	14	4.0	20	3.6	30	3.3
All other	30	15.0	48	13.5	80	14.6	90	10.0

When the expenditures of families of higher income levels are compared with those of families which live on $1,000 a year, it is apparent that with increasing income more is spent in actual amounts for each item in the budget. Except for a few conspicuous exceptions, however, the percentage of the total income spent for each item remains fairly constant. Expenditures for food decrease in their relative proportions of the total with ascending income; shelter, clothing, and household furnishings represent nearly uniform percentages of the total; whereas proportionately more is spent for miscellaneous items in the higher income groups than in the lower. Of these miscellaneous expenses, automobiles and amusements are almost wholly responsible for the higher percentage expenditures among families with $2,000 and with $3,000 a year. The percentage devoted to medical care decreases significantly with ascending income, although the actual expenditure increases.

The Cost of a Minimum Subsistence Standard of Living.— This discussion of the expenditures of families of various income levels raises the question, " What is the least amount upon which a family can live? " Efforts have been made by many investigators to supply an answer to this question. In 1930 the Charity Organization Society of New York estimated $1,259.96 as the minimum cost of maintaining dependent families of five members in health and decency. In 1929 the Chicago Council of Social Agencies made a similar estimate, this time for a dependent family of four, and arrived at a cost of $1,054.00.* In July, 1918, W. F. Ogburn estimated the costs of an " American subsistence standard " of living for a family of five in urban communities as $1,386; at 1929 prices the cost of this standard would be $1,469. From these and other estimates it appears that the costs at the 1929 price level of a minimum standard of living for a family of five residing in urban communities was between $1,000 and $1,500.

The real aim of minimum cost of living studies is not the determination of the smallest amount which people need in order to keep alive, but the determination of the least that people need to live in a manner consistent with present American ideas of human and decent existence. Families can and many do live in one or two rooms, but all minimum cost of living estimates have assumed that a family of five could not live decently in less than four rooms. Similarly all the estimates allow sufficient money for the purchase of the least amount of clothing to dress the family as other working class people are dressed, not simply enough to provide the blanket and breech-clout of the savage.

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* The original cost was $754 without rent or insurance; $280 has been added to cover these items.

In conjunction with estimates of the cost of a minimum standard of living, two factors must be borne in mind. First, the cost of maintaining the same standard of living is appreciably less in rural than in urban communities. Second, the family of five for which the cost of living is calculated is not typical of all families composed of more than one person, because 65 per cent of the families consist of four persons or less, while only 35 per cent have five or more members. Even if allowance is made for these factors, it is evident that a considerable portion of the population does not receive sufficient income to permit a minimum decent standard of living.

The Cost of a " Minimum Comfort " Standard of Living.—In addition to the studies of the cost of a minimum subsistence standard of living, a number of attempts have been made to ascertain the cost of a more generous scale of living, one which is above the subsistence level. This standard of living has been variously characterized. Some investigators have termed it "a minimum comfort standard"; others "a standard of wholesome living"; still others "a standard of health and decency."

In 1919 the United States Bureau of Labor Statistics drew up its so-called health and decency budget, a budget which includes the items considered necessary for the maintenance in " health and decency " of a working-man's family of five members. In 1919 the cost of this budget was $2,262.47; at 1929 prices its cost was $2,093.

A recent and careful attempt to determine the cost of a " minimum health and decency " standard has been made by the Chicago Council of Social Agencies. In 1929 they estimated that this standard for a family of five would cost $1,588.44 a year, exclusive of rent. A reasonable allowance for the latter item brings the total to $1,938.44. This amount is the least that is required in the opinion of this organization,

" for a manner of living that will make possible a high standard of physical, mental, and moral health and efficiency for adults, the full physical and mental growth of children, and provide for their moral welfare." " This budget . . . . indicates financial conditions of families above which Chicago agencies are not concerned in granting relief."

The various estimates place the cost of a " minimum comfort " or " health and decency " standard of living between $1,800 and $2,100 in urban communities. With 40 to 50 per cent of all families receiving less than $1,800 a year and more than 50 per cent receiving less than $2,100, it is evident that this standard of living is beyond the reach of at least one-third—and perhaps of one-half—of the entire American population.

THE ABILITY TO PAY FOR MEDICAL CARE

On the basis of the preceding data an opinion may now be ventured as to the capacity of the American people to pay for medical care.

The Ability of the Nation as a Whole to Pay for Medical Care.—In 1929 the American people spent $3,656,000,000 for medical care out of a total income of $90,790,000,000. The expenditure for medical care is high in relation to what was obtained for it: not less than $300,000,000 was thrown away on patent medicines, and an additional $127,000,000 for the services of cultists not prepared to give scientific medical care; no inconsiderable fraction of the expenditure for other medical services is wasted, for with better organization services of doctors, dentists, and nurses could have been obtained at a smaller cost. This is not the place to discuss these matters; all that need to be said here is that the total expenditure for medical care—considering that the nation spent more than $20,000,000,000 for luxuries, amusements, and non-essentials of various sorts—is not beyond the nation's capacity to pay; indeed several billions more could easily be found if it were necessary. These statements rest, of course, on the assumption that medical care is paid for through taxation and that the taxes are levelled in accordance with ability to pay—that the wealthy carry the burden of the poor.

Ability to Pay on an Individual Basis.—Nor is it difficult to arrive at a conclusion of the capacity of people on an individual basis to pay the costs of medical care. We may say categorically that on the individual basis of payment an appreciable percentage of families are now unable to—and in fact do not—pay the costs of medical care as these are reflected in " high-cost " illnesses. From the Committee's survey of 9,000 families,* it has been ascertained that 52 per cent of all hospitalized cases among families with incomes under $1,200 receive free hospital care and that for families with incomes between $1,200 and $2,000 the figure is 22.8 per cent. On this basis it appears that at least 30 per cent of all families with incomes under $2,000 are currently judged to be unable to pay the full cost of hospital care or of other services associated with illness involving hospitalization. Very few of these families are indigent in the accepted meaning of that word; they have a home and pay its rent; they buy their food and clothing, and pay their doctors' bills in ordinary sickness. But when they experience serious [illegible] requiring hospital care, the services of specialists, nurses, X-ray, and laboratory, they are unable to pay their way.

While an appreciable proportion of families, ordinarily self-supporting, are unable under this system of individual payment to pay the costs of medical care in serious high-cost illness, a large majority of families can and do pay for the care they receive. Yet a considerable proportion of these families often find it extremely difficult to meet unanticipated medical costs which may amount to one-fourth or one-third of their annual incomes. Under these circumstances, it is but natural for them to believe that the costs of medical care are excessive and to fill the air with their complaints.

The system of individual payment of medical costs is unsatisfactory for people with incomes below $5,000—that is, for 90 per cent of the population. It is unsatisfactory because serious illness which necessitates expensive medical treatment is a hazard like death and fire and shipwreck, though its financial effects are not of the same magnitude as the financial effects of these and its occurrence is more frequent. The endeavor of the individual to meet from his own resources the effects of catastrophes such as these create or to protect himself against their effects through the accumulation of individual financial reserves has always been difficult and unsatisfactory. The reasons for this are obvious.

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* See Publication No. 26, listed at the end of this volume.

That people who strain under the load of heavy medical costs or who evade those costs by resorting to charity care ordinarily spend appreciable amounts for luxuries and amusements has relatively little to do with the question of their ability on an individual basis to pay the costs of medical care. *Expenditure for unessentials is evidence of ability to pay only if the family's resources are properly tapped; i. e., if the cost of medical care is known in advance and can be and is budgeted.*

On the whole people spend their money for what they desire at the time. When well, they do not need (or think they need) medical care and they spend their incomes for such other needs and desires as present themselves. When illness occurs, many families have only their current incomes (and if the wage-earner is ill, not that) out of which the costs can be met. Having spent freely before, they have no funds on hand with which to pay medical expenses. In actuality, therefore, luxuries and unessentials are currently given precedence over medical care in the spending habits of the people.

The Ability of People to Pay Present Medical Costs on a Group Basis.—If medical care were purchased on a group basis through fixed, periodic payments in such a manner that each family paid the average amount now being spent by those of its income level, could people then pay these costs without difficulty? So far as concerns families with incomes over $2,000, whether residing in rural areas or large cities, the answer is undoubtedly in the affirmative. For families with incomes of $1,500 or less, there is perhaps some question; for, considering their standard of living, one might be tempted to say that they could manage to pay their average costs of medical care only with great difficulty. These observations are, however, superficial. If it is hard for families with incomes of $1,500 or less to spend what they do for medical care, so is it hard for them to spend what they do for food and shelter and clothing. The fact is that these families have difficulty in meeting any of their expenses. Their incomes are not large enough, or are barely large enough, to provide for the minimum requirements of decent existence. Such families are eternally required to choose among necessities.

One further reflection may be ventured. It is always easier for people to meet a given expense if that expense is paid in small, periodic installments than if it must be paid all at once, or in a relatively short period. Conversely, people are able to spend more for a given commodity or service when its cost is evenly distributed over a period and may be budgeted, than when the cost is of the nature of present medical costs; *i. e.*, unpredictable, unevenly distributed over time, and impossible to budget. On these grounds, it would appear that if present expenditures for medical care were made in small monthly or weekly installments throughout the year, people could pay these amounts with much less difficulty than at present. Under such a system there would be much less complaint, if indeed any complaint at all, about the high cost of medical care.*

THE ABILITY TO PAY FOR ADEQUATE MEDICAL CARE

Hitherto the discussion has been concerned with the ability of people to afford the costs of the medical service which they now receive. The inquiry may now be focussed upon ability to pay the costs of adequate medical care.

It is difficult to determine the amounts and kinds of service which constitute adequate medical care and the smallest sum for which it may be provided. From the data contained in the Committee's report on "The Fundamentals of Good Medical Care," one may calculate the cost of providing adequate care as approximately $36 per capita,† of which $10.70 represents the cost of dental care.

The experience of the various organized medical services investigated by the Committee also throws light upon this matter. In the Endicott Johnson Medical Service nearly complete and adequate medical care, exclusive of dental service, is provided at a net cost of $22.76 per person in the population at risk.* The Roanoke Rapids medical service furnishes comprehensive medical care, exclusive of dentistry and of drugs and medicines, at a cost of $17.36. Allowance for the cost of prescribed drugs brings the total to $18.89.† The care provided by this unit is not as comprehensive as that rendered by the Endicott Johnson service; specialists' care, for example, is not available to the same extent. The medical service of the Homestake Mining Company provides good care at a net cost of $11.54 per person in the population served.‡ However, this medical unit does not provide visiting and home nursing service, only abnormal confinements are hospitalized, and there are no specialists on the medical staff. At Fort Benning, elaborate and complete medical care (exclusive of dentistry) costs approximately $26 per capita.§

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* For an illustration of the way in which fixed, periodic payment not only eliminates the uneven burden of costs, but enables people to spend more for medical care, see Publication No. 20, listed at the end of this volume.

† See Publication No. 22, listed at the end of this volume. This represents the cost of only such types of service as individuals ordinarily pay for; *i. e.*, it excludes public health services and the costs of hospital care for patients with mental disease or tuberculosis.

The available data bearing upon the costs of providing adequate medical care, *exclusive of dentistry*, may be recapitulated as follows:

	Per Capita	Per Family ‖
Cost of Adequate Medical Care (Estimate)..	$25.30	$103.73
Fort Benning Medical Service..............	26.43	108.36
Endicott Johnson Medical Service............	22.76	93.32
Roanoke Rapids Medical Service............	18.89	77.45
Homestake Medical Service.................	11.64	47.72

Comparison of the above costs with the amounts that people are now spending for medical care suggests that for a large part of the population the problem of providing reasonably adequate medical care does not hinge upon ability to pay a particular sum; it depends upon (1) curtailment of wasteful expenditures, (2) efficient organization for the provision of medical care, and (3) the development of means of paying on a budgeted and anticipated basis.

It would appear that the cost of providing reasonably adequate medical care, exclusive of dental service, is between $15 and $25 per capita, or between $61.50 and $104 per family.

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* Publication No. 5, listed at the end of this volume.

† Publication No. 20, listed at the end of this volume.

‡ Publication No. 18, listed at the end of this volume.

§ Publication No. 21, listed at the end of this volume.

‖ Per-capita cost multiplied by the average number of persons per family (4.1) in the United States as a whole in 1930.

Let us strike the middle figure and ask: Assuming that reasonably adequate medical care (exclusive of dental service) cannot be furnished for less than $20 per capita or $82 per family, are people able to pay this much?

The question of whether on an individual basis families can afford to spend an average of $82 for medical care may be disposed of easily. Since the cost would be distributed among people in the same erratic and uneven way as prevails at present, the answer previously given to the question of the ability of people to pay the present costs of medical care on an individual basis is equally applicable here.

If the cost of care were evenly spread through group purchase and fixed, periodic payment, could families pay $82 a year for medical service? More explicitly, above what income could families pay this much; below what income would this cost be more than they could afford? No answer to this question can be more than an opinion, and reasonable individuals might hold different opinions. It appears to us, however, that $1,500 would constitute the dividing line. It does not seem reasonable to believe that families with incomes of $1,500 or less could be induced to increase their present expenditures for medical care to as much as $82 a year; they have too many other urgent demands upon their income. To them adequate medical care at this cost will probably seem less desirable than other essentials which would have to be sacrificed in order to obtain it.

Thus far dentistry has been left out of the reckoning. It is difficult to make even a crude estimate of the cost of providing adequate dental care. In the first place, none of the organized services previously referred to provide complete dental care; in the second place, the present need for dental service gives little indication of what the annual need would be if adequate service were currently provided. The present need for dental care (and estimates of the number of people requiring treatment for caries or other dental conditions seldom fall lower than 75 per cent of the total population) represents to a very large extent the accumulated defects of years. Consequently the amount of service required to remedy present defects would be very different from the amount of service annually required once these accumulated defects had been corrected. The data of Publication No. 22 provide the only basis for an estimate of the cost of adequate dental care.* From figures of the number of dentists required, it may be calculated that the annual cost of adequate dental care would be $10.70 per capita, or $44 per family. This assumes that dentists do only chair work and that subsidiary personnel are utilized for laboratory and X-ray work, and for cleaning and scaling.†

In any one year, only 1 out of every 8 individuals three years of age or over in families with incomes under $1,200 receives dental care of any sort. Similarly each year, only 1 in every 5 persons three years of age or over in families with incomes between $1,200 and $2,000 now obtains dental care. This indicates inadequate dental care, since good care, as defined in Publication No. 22, requires that each person have at least one visit to a dentist (or course of treatment) each year. However, by the same criterion it is plain that even the very wealthy do not now obtain adequate dental service; only 6 out of every 10 individuals in families with incomes of $10,000 and over visit their dentist annually. This indicates again that the problem of providing adequate medical care is not altogether a matter of costs.

It has been estimated that adequate dental care, even when provided in the most efficient and least expensive manner, would cost at least $44 per family per year. It is obvious therefore that for families with incomes under $2,000 adequate dental service is a luxury too high priced to be afforded. In 1928, such families constituted approximately 50 per cent of the total population.

Geographical Variations in Ability to Pay the Cost of Adequate Medical Care.—The opinion has been ventured that not less than 10 per cent of the population cannot reasonably afford to purchase adequate medical care. It is obvious therefore that if this portion of the population is to receive such care the cost must be borne either in whole or in part by the remainder of the population. This means that medical service for those who cannot pay must be subsidized either through taxation or philanthropy.

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* The estimate is made on the basis of treatment for needs and defects currently arising, *i. e.*, an attempt has been made to allow for the amount of care required for accumulated defects.

† See Publication No. 22, listed at the end of this volume.

There can be no doubt that in normal times the wealthier section of the population is well able to bear part of the costs of adequate medical care for the poorer section. The nation as a whole could pay the costs of adequate medical care. But the Federal Government, has not ordinarily been called upon to finance governmental social welfare activities. Even education has been almost altogether a matter of local or state concern.

Assuming that adequate medical care (exclusive of dentistry) costs $82 per family, are there any states with total resources so small that their inhabitants, considered as a unit, are unable to pay for such care? It will be recalled that in 1919 there were four states (Alabama,Mississippi,Tennessee, and Arkansas) where the average income per family was less than $1,600. It will further be recalled that income in these states has probably not changed materially since 1919. Even if income were divided equally the inhabitants of these states would be barely able to pay the cost of adequate medical care. Hence it would appear that the burden of taxation necessary to finance the provision of adequate care for the large fraction of the population who cannot themselves purchase this care would be too heavy to be borne in these states. Granting our assumptions, the only way that the people in these states could obtain adequate medical care would be through the aid of the Federal Government. On the same grounds, reasonable doubt may be expressed concerning the capacity of several other extremely poor states to provide adequate medical care for all their inhabitants.

These conclusions deal only with questions of ability to pay. Whether it is wise and socially expedient that medical care be provided through tax funds, or for the inhabitants of one state to be taxed for the benefit of the inhabitants of another state, are problems outside the scope of this chapter.

PART IV

THE FINDINGS FROM COMMUNITY SURVEYS

CHAPTER IX

THE COSTS OF MEDICAL CARE AS REVEALED BY THE COMMUNITY SURVEYS *

It was early recognized that no inquiry into the Committee's problems could lead to balanced judgments and wise proposals without a series of community surveys, each to picture the economics of medical affairs in a representative area. It was anticipated that these surveys would illuminate medical relations in the unlike communities which together constitute the United States. The specific purposes of the surveys were three:

1. To enumerate and describe the medical facilities.
2. To study the practitioners and the services they render, and the institutions and their operation; to describe both economic and professional aspects of their activities.
3. To determine the total expenditures for medical care and their distribution among the agencies which provide professional services.

In other chapters of this volume there appear numerous citations from these surveys. The economics of the physician's practice, his problems of location and specialization, the utilization of his time and labor, his income and social position; the problems of the dentist's professional life; the plaints of the drug store and of the hospital; the sufferance of the cultist—all these have been clarified by the intimate observations of the community surveys. Here, we shall review from the reports † a few main findings which receive no systematic treatment elsewhere in this document. Then a general collation of costs will measure the medical budget not merely on a national basis (as in Table 1), nor on a family basis (as in Table 17), but on a community basis.

SELECTION OF COMMUNITIES AND METHOD OF STUDY

The Committee's original program specifically contemplated "surveys of the medical services of a large city, of a small city, and of a rural community." ‡ This was later amplified and more than one example in each class was studied. Philadelphia

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* We are indebted to Allon Peebles, for assistance in the preparation of this and the following chapter.

† Publications No. 6, 9, 10, 12, 13, and 28, listed at the end of this volume.

‡ See p. 30 of Publication No. 1, listed at the end of this volume.

was selected from among the large cities of the country,* and Shelby County, Indiana, from among rural areas. San Joaquin County, California, was chosen to typify a comparatively small, self-contained, and relatively prosperous area in the extreme western part of the United States. Vermont was to provide a picture of conditions in the mature rural and semi-rural northeastern section; Franklin County in Vermont was selected for intensive survey as the local area typical of the state as a whole. In ten southern states, Chester County, Tennessee, was found by statistical procedures † to be representative of the smallest and poorest counties, Toombs County, Georgia, of the middle counties, and Lee County, Mississippi, of the largest and most prosperous counties.‡

The reports are veritable encyclopedias on medical facilities, their utilization, and their costs, and must be consulted in the original for all details of method, procedure, and findings.

The surveys were made in the course of three years and the data apply to 1928, or to 1929, or to 1930. Obviously the results must be interpreted in the light of changing economic conditions during this period.

GENERAL DATA FOR THE SURVEYED COMMUNITIES

In Table 39 the essential data which characterize the surveyed communities have been brought together. In the three southern counties the populations include appreciable proportions of negroes and negligible proportions of foreign-born persons. In Vermont, in Franklin County, and in Shelby County the populations are almost entirely native white. In San Joaquin County and in Philadelphia there are appreciable proportions of foreign-born persons and the populations are also otherwise more heterogeneous.

Of the communities surveyed, the southern counties were the poorest. San Joaquin County, California, is wealthy, and

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* A supplementary survey in Detroit was restricted to a study of the practice of physicians and dentists.

† For details of method on the selection of representative areas, consult the Appendix in Publication No. 23.

‡ In addition to these which have been cited, two supplementary surveys of limited scope were made; in Detroit the study was restricted to the scope of practice and the incomes of physicians and dentists to provide a check upon the representative nature of data reported by the corresponding practitioners in Philadelphia; in Orange County, Vermont, the survey was limited to physicians and was particularly addressed to the problem of the adequacy of existing numbers in this sparsely settled rural community.

TABLE 39

A SUMMARY OF SELECTED DATA FROM EIGHT COMMUNITY SURVEYS

Community Surveyed	Population (1930)	Year of Survey	Population of Largest City(a)	Per Cent of Population Rural	Per-Capita Spendable Money	Medical Facilities per 1,000 Persons			Total Per-Capita Costs of Medical Care
						Physicians	Dentists	Local General Hospital Beds	
Chester County, Tenn.	10,603	1930	1,503	100	$ 189	0.76	0.19	....	$ 6.45
Toombs County, Ga.	17,165	1930	3,585	79	99	0.70	0.17	....	7.54
Lee County, Miss.	35,313	1930	6,361	82	171	1.02	0.25	0.99	11.14
Franklin County, Vt.	29,975	1930	8,020	73	736	1.07	0.30	1.70	21.20
Vermont (the State)	359,611	1930	24,789	67	753	1.21	0.43	3.03	.....
Shelby County, Ind.	26,552	1929	10,500	63	478	1.17	0.56	1.58	21.32
San Joaquin County, Calif.	102,940	1929	48,000	42	1,255	0.87	0.70	5.25	36.09
Philadelphia, Pa.	1,950,961	1929	1,938,241	0	1,331	1.97	0.82	5.23	53.89

(a) The data in this column and in the columns to the right apply to the survey year and are derived from the survey data.

its people have high per-capita spendable incomes. Franklin County, Vermont, does not have so high a per-capita income as San Joaquin, but it is in considerably better economic circumstances than the southern counties or than Shelby County, Indiana. The per-capita spendable income of Philadelphia is the highest in the series. In general, the spendable wealth of the communities increases with the size of the population. Similarly, the numbers of physicians, dentists, and local general hospital beds (per 1,000 persons) are greater in the larger than in the smaller places.

THE TOTAL COSTS OF MEDICAL CARE

In these community surveys, the total costs of medical care include all types of service for well persons and for those who are sick. They include expenditures for physicians, dentists, and nurses, for midwives, chiropodists, and optometrists, for osteopaths and other sectarian practitioners, for hospitals and clinics, for drugs and medicines, for official and voluntary public health agencies. The costs were accumulated by compiling the gross incomes of all practitioners, the gross (medical) sales of drug stores, the total expenditures for the maintenance of hospitals, clinics, laboratories, public health agencies, etc. These costs are therefore all-inclusive for the people in the communities except that they are only the direct costs. They disregard the indirect costs of illness, and they do not include loss in wages because of illness or disablement, the value of time lost from school or housework, or the intrinsic or productive value of human life lost through premature death.

In the upper part of Fig. 29, the total costs of medical care are shown for the surveyed communities (exclusive of the State of Vermont) arranged in sequence according to increasing population; and in parallel, the lower part of the chart shows the income of each community measured in terms of spendable dollars per capita.* The striking fact is that spendable income and costs of medical care are closely correlated. With the exception of Lee County in Mississippi, the magnitude of both increases with population. The original data and those summarized in Table 39 further associate these correlations with the availability of medical facilities. In general, the larger the population, the greater the wealth, the more numerous the

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* This is not total wealth; it is that fraction of annual income which comes in the form of money or of farm or other produce which can be used in trade, purchase of commodities, or payment of medical care. See *Sales Management*, Section II, Sept. 27, 1930, and October 31, 1931 (Sales Management, Inc., 420 Lexington Avenue, New York City).

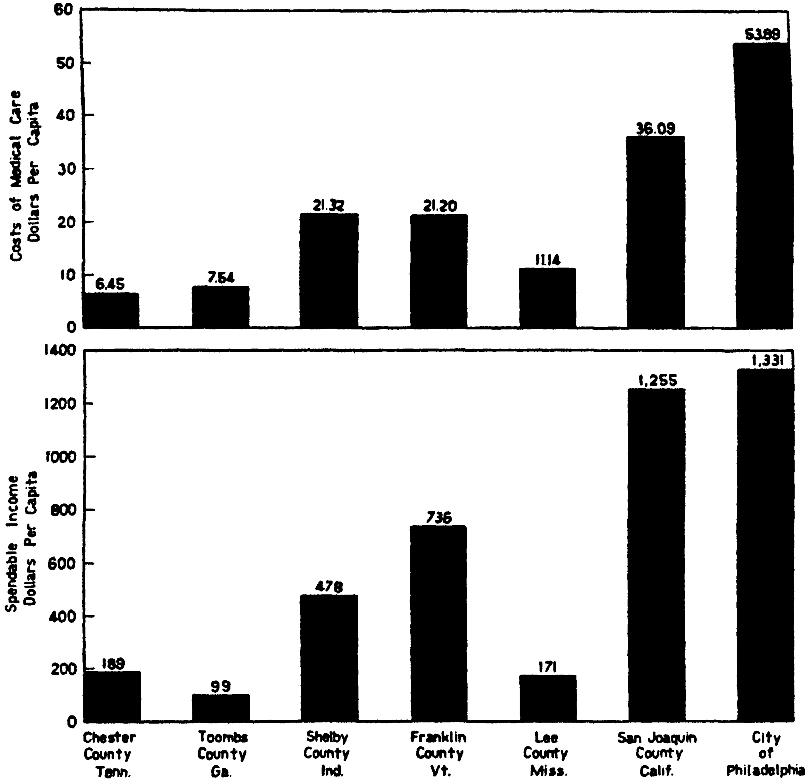

FIG. 29. THE LOWER GRAPH SHOWS SPENDABLE INCOME; THE UPPER GRAPH SHOWS EXPENDITURES FOR MEDICAL CARE

The surveyed communities are arranged in sequence, from the smallest in population (left) to the largest (right).

practitioners and agencies available to supply medical service, and the larger the expenditures for medical care.

The per-capita expenditures range from $6.45 in Chester County (1930) to $53.89 in the City of Philadelphia (1928).*

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* The figure for Philadelphia is somewhat high because many non-residents go to the city and make expenditures for medical service; the figures for the other communities are also subject to slight correction because counties are not self-contained medical units. For details, *cf.* the original reports.

The cost data for the three southern counties apply to 1930 when economic conditions were worse than in 1928 or 1929. Supporting data indicate that the figures might have been somewhat higher in the preceding year or two. Nevertheless, the recorded expenditures for medical care are substantially typical and the wide differences among the communities are not spurious. To illustrate how low the total medical expenditures are in the smallest places, a few comparisons may be cited. In the larger and wealthier San Joaquin County, California, the expenditure for physicians ($8.68 per capita) or for hospital services ($8.48 per capita) or for drugs and medicines ($6.75 per capita) exceed the expenditure ($6.45 per capita) for all types of medical care in the smaller and much poorer Chester County, Tennessee.

The details of the surveys support the generalization that (per-capita) expenditures for medical care are low in the South and in communities with small populations and are higher in the more populous or more prosperous places. Where the people have more wealth they spend relatively more for medical care, and where they are poorer they spend relatively less. Not only wealth, but the proportion of wealth which is available in a spendable form, influences expenditures. The costs of medical care appear in a different light and are judged against different standards by the city dweller accustomed to receive all his income in cash, and by the farmer of equal total wealth who handles little money in the course of a year. Medical care is generally a " cash commodity " purchased with spendable income. A $25 charge by a physician or dentist may be received with composure by a resident of Philadelphia who has a cash income of $1,500; but it may be " viewed with alarm " by a farmer in Vermont with a money income of $300—or by a farmer in Georgia with $100—despite the fact that the farmer may have a total annual income worth $1,500 and despite the fact that $25 might pay for twice as much medical care in the rural area as in the urban community.

THE COMPOSITION OF THE MEDICAL BILL

To obtain a better understanding of the costs of medical care not merely the total sum must be considered, but also the composition of the total. The essential facts are summarized in the two following charts. In Fig. 30 the percentage composition of the medical bill is shown for each of the surveyed communities. In four of the seven the largest single item is the expenditure for the services of physicians (and for medicines which they dispense); in two of the smaller counties—Toombs and Lee—drugs and medicines cost more than physicians' services; and in Philadelphia the cost of hospital service exceeds the expenditure for physicians or for drugs and medicines. The percentage of the total which is spent for physicians' services ranges from 24.0 in San Joaquin to 37.5 in Chester. Apart from the two counties in which medicinals head the list, the cost for these commodities is second in Chester, Shelby, and Franklin counties, and third in San Joaquin and Philadelphia. In San Joaquin the expenditure for hospitals exceeds the cost of drugs and medicines and nearly equals the amount paid to physicians.

Considering the several communities as a whole, the general sequence of expenditures, in decreasing order, is: physicians, drugs and medicines, hospitals, dentists, and public health. All other services (including private duty nursing, services from other private practitioners and miscellaneous items) cost from 4.9 per cent (Chester) to 14.4 per cent (San Joaquin). To many readers it will be no surprise that, on the whole, one-fourth to one-third of medical expenditures is spent for the services of physicians, and that large fractions go to support hospitals and to remunerate dentists. But many will be unprepared for the finding that so much is spent in the purchase of drugs and medicines and so little toward the support of official and private public health agencies. Indeed, if the cost of medicinals dispensed by physicians had been combined with expenditures in the drug stores (of which a large proportion was spent for patent medicines), and if public health expenditures had been restricted to financial support for local agencies only (and had not included pro-rata shares of state and even some share of federal public health costs) the disbursements for largely useless palliatives and for strictly preventive services would have been even more strikingly contrasted.

An analysis of the percentage distribution of costs is by itself incomplete; unless the actual per-capita expenditures are considered, the percentage data may be misleading. It is not

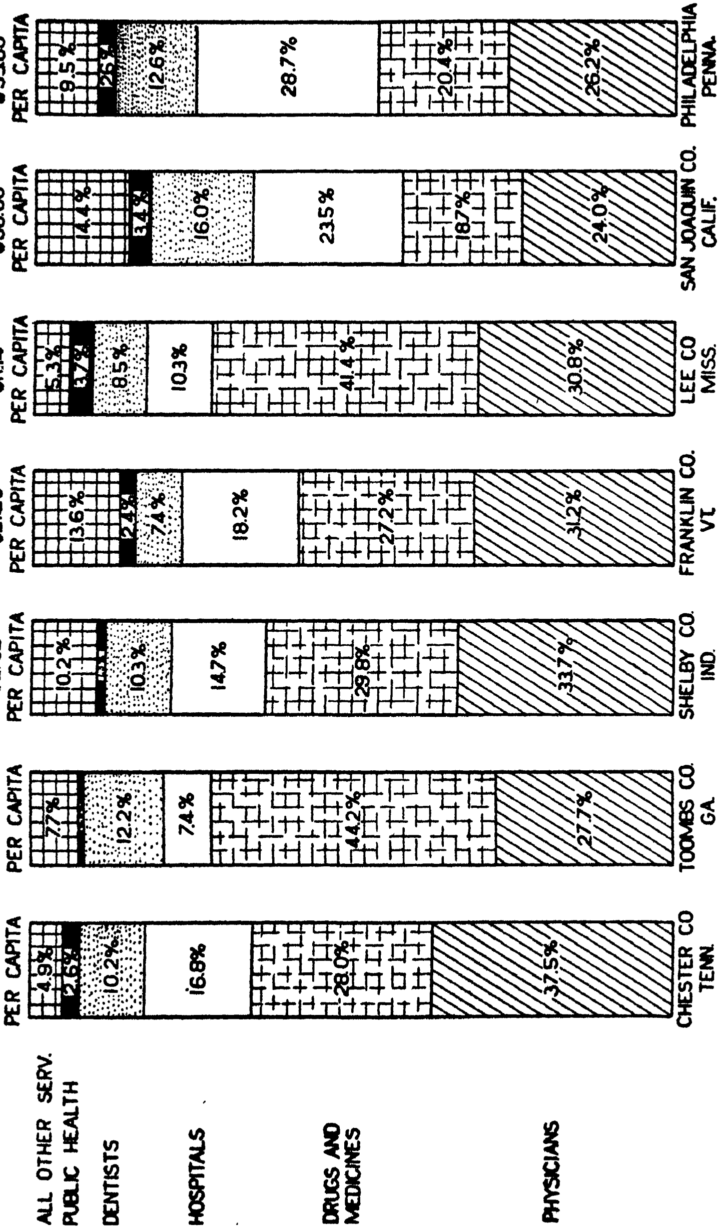

FIG. 30. THE PERCENTAGE COMPOSITION OF THE MEDICAL BILL IN SEVEN SURVEYED COMMUNITIES

sufficient to note that physicians receive 37.5 per cent of the total medical bill in Chester County and only 24.0 per cent in San Joaquin County. It must also be noted that the total bill is $6.45 per capita in Chester County and is $36.09 in San Joaquin, because 37.5 per cent of $6.45 is $2.42 and 24.0 per cent of $36.09 is $8.68; though the percentage of the total spent for physicians is smaller, more money is spent for physicians in San Joaquin than is spent in Chester not only for physicians but for all medical services combined. Accordingly, in Fig. 31 the composition of the medical bill for each community is presented graphically to display in absolute amounts the expenditures for each type of service. The black areas in the chart are proportional to the expenditures. Both the amounts and the sequence of magnitudes become increasingly clear in this chart.

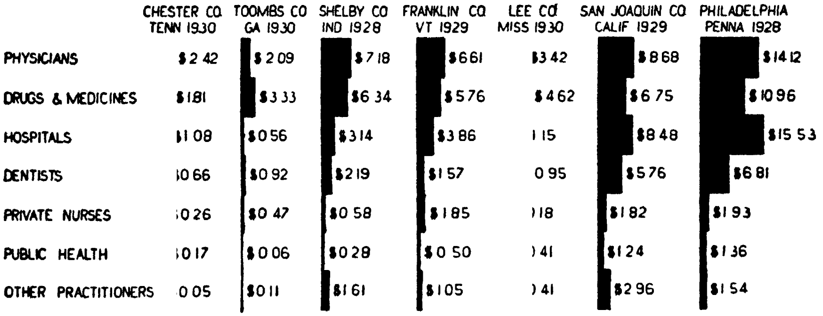

FIG. 31. THE ACTUAL EXPENDITURES FOR THE PRINCIPAL TYPES OF MEDICAL SERVICE

The expenditures for all types of medical care increase eightfold when Chester County at one extreme is contrasted with Philadelphia at the other; income in spendable money increases sevenfold between the same extremes, and thirteenfold between Toombs County and Philadelphia. That the expenditures for the principal types of medical service increase more or less proportionately with the size of the total medical bill appears from Fig. 31. In addition it is evident that in the communities with larger total expenditures, disproportionately more is spent for hospitals than in places where less is spent for medical care; otherwise the sequence among the items in the total remains substantially the same. In the places with small populations, where there are no local hospital facilities or where these are meager, the people spend little money for hospital care received locally or in adjoining communities; in the more populous places where there are more and better hospital provisions, the people spend more money for hospital care.

To be sure, the difference between medical expenditures in small and large communities is not so great as the differences between the per-capita expenditures would indicate. Each dollar buys more medical care in Chester, Toombs, or Lee counties than in San Joaquin County or in Philadelphia. Physicians' and dentists' fees per unit of service are lower in the small place than in the large, and the cost per day in a hospital is lower. But by no reasonable stretch of the imagination could it be conceived that $6.45 in Chester or $7.54 in Toombs buys the medical services which are bought by $53.89 in Philadelphia. The people who live in larger and wealthier communities spend more for medical care, and probably receive more care, than those who live in the poorer and less populous places. The original reports from which these cost figures have been abstracted provide a host of confirmatory observations. Furthermore, the detailed records provide equally ample evidence that, on the whole, medical care is of higher quality in the larger than in the smaller communities.

Although the ratio of medical practitioners to population is higher in the large than in the small communities, the differences in these ratios are insufficient to counterbalance the differences in the per-capita expenditures for the several types of service. In consequence, the incomes of physicians and dentists are in general greater in the more congested areas than in the more sparsely settled places.

THE TOTAL COSTS OF MEDICAL CARE IN THE UNITED STATES ESTIMATED FROM LOCAL COMMUNITY SURVEYS

On the ground that each of the communities surveyed is representative of large sections or of numerous communities in this country, the data of the surveys provide a basis from which to estimate the total costs of medical care for all the communities in the United States. It is recognized that such an extrapolation cannot be highly accurate or reliable. Nevertheless, it affords an opportunity to obtain an independent estimate of the country's medical bill and provides the only available basis from which the magnitude and composition of the bill can be computed for large, medium, and small places, separately. Accordingly, the computation was carried out by the procedure described in Appendix B; only the results are presented here. Inasmuch as subjective considerations enter into this computation, it is necessary to record that the method described in the appendix and the results which follow from it have not been adjusted to the estimates of the total medical bill developed by other procedures (see Chapter II). It should be clear that the estimates presented here are *local community costs only*. They include the direct expenditures by the family, expenditures from philanthropic gifts, from the income of endowed funds, from corporation expenditures, from tax funds, and from other sources; they do not include expenditures made on a state or national basis. Some of these expenditures are made by the people who receive the service to which the payments apply; some are made by others for those who cannot pay for themselves.

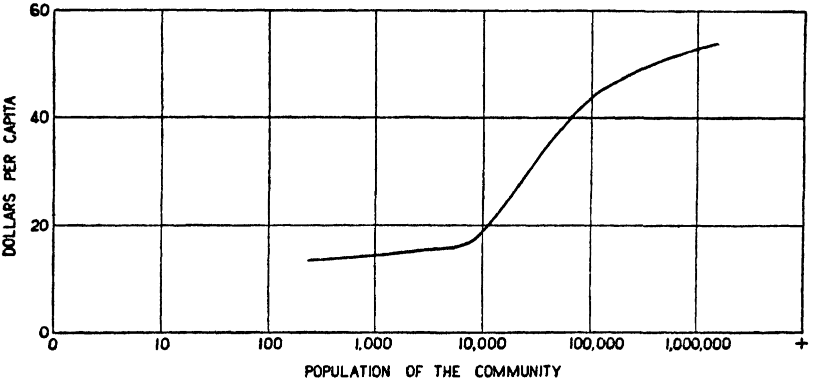

FIG. 32. THE ANNUAL TOTAL COST OF MEDICAL CARE (IN DOLLARS PER CAPITA) ACCORDING TO THE SIZE OF THE POPULATION IN THE COMMUNITY

From the data of the community surveys it may be concluded that the total cost of medical care varies with the size of the population in the manner shown in Fig. 32. That the per-capita costs rise with population was foreshadowed by the data in Fig. 29; that the curve is smooth is only a reasonable validation of the method of computation. When these estimated per-capita costs (and their constituent items) are applied to the number of persons in communities of each specified size in the United States (in 1930), there result the data contained in Appendix Table 6-A which are summarized for the entire country in Table 40. This procedure leads to the conclusion that the sum of community budgets in the United States was approximately $3,300,000,000 ($26.94 per capita) for 1930 and $3,200,000,000 ($26.82 per capita) for 1929.

TABLE 40

TOTAL EXPENDITURES IN THE LOCAL COMMUNITIES OF THE UNITED STATES,(a) 1929 AND 1930

Type of Service	Total Expenditures(a)		Per-Capita Expenditures(a)	
	1930	1929	1930	1929
All types	$3,307,800,000	$3,246,529,000	$26.94	$26.82
Physicians(b)	912,425,000	896,246,000	7.43	7.40
Drugs and medicines	818,110,000	804,875,000	6.66	6.65
Hospitals and sanatoria	740,242,000	725,035,000	6.03	5.99
Dentists	404,830,000	396,589,000	3.30	3.28
Private duty nurses	141,330,000	138,679,000	1.15	1.14
Other private practitioners	133,604,000	130,918,000	1.09	1.08
Public health	82,081,000	80,698,000	0.67	0.67
Miscellaneous	75,178,000	73,489,000	0.61	0.61

(a) These are not the total expenditures for the United States. The sum of expenditures in all local areas does not include expenditures which are made on a non-local, or on a state or nationa

(b) Including drugs and medicines which they dispense.

The estimates include all the important expenditures for medical care, except certain state and federal expenditures which had not been included (*pro rata*) in the community surveys.* The per-capita equivalent of the excluded items is approximately $1.29; and adjustment for this figure brings the total cost of medical care in the United States to $28.23 for

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* One item of federal expenditure (U. S. Public Health Service) is included in the per-capita figures for Philadelphia and San Joaquin only; the costs of federal hospital activities were not included. In addition, state public health and hospital costs are not appropriately included because the surveyed communities were not adequately representative of states, though presumably representative of local areas.

1930 and $28.11 for 1929. The last figure may be compared with $30.08 presented in Table 1 on the basis of data derived from almost entirely independent sources.

The total figures developed from the per-capita costs in the community surveys rest in part upon data accumulated for the year 1930, a year in which the turn of economic conditions resulted in somewhat lower expenditures for medical care than had obtained in the two preceding years. It is not surprising that this estimate of the total is somewhat lower than that presented earlier (Chapter II) from data derived from experiences in the year 1929. The extrapolation from the community survey data confirms the estimate derived from practitioners' incomes and institutional or governmental expenditures, witness the following comparison in Table 41 between the total bill for the United States and the total for expenditures made in the constituent local fractions.

TABLE 41

A COMPARISON BETWEEN THE SUM OF COMMUNITY MEDICAL BUDGETS AND THE TOTAL EXPENDITURES FOR MEDICAL CARE IN THE UNITED STATES, 1929

Type of Service	Total of Community Budgets(a) Per Capita	Total for the United States(b) Per Capita
All types	$26.82	$30.08
Private practitioners(c)	12.90	15.88
Drugs and medicines(d)	6.65	5.47
Hospitals and sanatoria	5.99	7.04
Public health	0.67	1.00
Miscellaneous	0.61	0.69

(a) Exclusive of the corrections cited on p. 168.
(b) From Table 1.
(c) All categories and including drugs and medicines which these practitioners dispense.
(d) Other than those dispensed by private practitioners or not included in other items.

The total per-capita expenditure is lower in the estimates from the community surveys than for the entire country by $3.26, and this difference devolves principally from lower figures for private practitioners, hospitals and sanatoria, and for public health. For the latter two items, the difference was anticipated (and was adjusted on the preceding page in the addition for expenditures made by state and national agencies); but for the former it was not. Part of the difference from these three items is counterbalanced by the higher estimate for drugs and medicines in the community than in the national bill. The two sets of figures are in close agreement when considered with regard to the discrepancies in the types of service each includes or excludes and with reasonable allowance for substantial differences in methodology. In a general way, they indicate the same composition of the medical bill.

CHAPTER X

SOME OBSERVATIONS FROM THE COMMUNITY SURVEYS

In this chapter the general conclusions from the community surveys are presented in an objective manner—by broad selection of quotations from source documents, so that the evidence from which they flow can be readily examined. The citations are taken in turn from each of the seven complete surveys made by the Committee, beginning with the three southern counties, the smallest and most rural communities, and ending with Philadelphia, the city which in this series represents the large metropolitan areas of the country. The paragraphs quoted in the following pages are not necessarily contiguous in the reports from which they are excerpted, and many of the quotations are not complete paragraphs; but they are representative of the conclusions in the original documents.

QUOTATIONS FROM THE REPORTS

THREE SOUTHERN COUNTIES *

In ten southern states with a total of 877 counties and 23,100,000 persons, Chester County, Tennessee (population in 1930, 10,603), represents 298 counties, each having less than 14,000 persons.

Toombs County, Georgia (population, 17,165), is representative of 293 counties each having 14,000 to 25,500 persons, in ten southern states.

Lee County, Mississippi (population, 35,313), is representative of 286 counties, each having 25,500 or more persons, in ten southern states.

"The data presented are sufficient to indicate that the amounts of money spent for medical care in two of the counties which were chosen for survey are grossly inadequate to provide extensive medical services for the population as a whole, and to remunerate practitioners or to maintain medical facilities. Only in the largest county (Lee) does it appear that the community is populous enough or has sufficient means to support facilities on a scale even remotely approaching standards of adequacy.

"In contrast with more prosperous areas of the country, physicians in Chester, Toombs, and Lee counties receive low

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* See Publication No. 23, listed at the end of this volume.

incomes, and their expenses of practice consume more than half of their gross receipts. Collections for medical services rendered are difficult because the population as a whole has very little ready money.

". . . . hospitals are unable to maintain plant and personnel in readiness to serve patients unless payments are promptly made for services rendered. From the standpoint of the poorer residents of each of these three counties, hospitalization would appear to be a major financial catastrophe. Illnesses are hospitalized only as a last resort and surgical operations are postponed as long as possible—frequently with serious consequences.

". . . . Hospital care (exclusive of special nursing charges and the fees of attending physicians and surgeons) cost an estimated average of 98 cents per capita in the total population of the three counties. When, however, the expenditures for hospitalization are expressed in terms of the amounts charged each individual patient who received general hospital care during the year of the survey, the cost becomes approximately $42 per individual served. . . . ." (p. 135-136.)

". . . . the population of the South has, on the average, about $200 per capita or $800 per family in spendable money; under these circumstances, how much can be budgeted for medical care each year? A major illness of one member can easily consume one-fourth or one-third of the family's spendable money. For the lower income groups and for the poorer sections of the country, the individual method of paying for service when and if received, has serious defects.

". . . . If the data assembled in the community surveys of these three southern counties are indicative of conditions in the rural South as a whole, the question may well be asked: Can these ten states unaided support medical personnel and facilities sufficient in numbers and quality to assure adequate medical care to all residents of the area?

"Other Committee reports, now in preparation, will indicate that complete preventive and therapeutic medical care costs somewhere between $25 and $50 per capita per annum. If residents of the South as a whole are to receive adequate medical attention, the per-capita annual expenditure will have to be doubled in those counties which resemble Lee in characteristics and more than trebled in the counties of the Toombs and Chester type. . . . . An expenditure of even $25 per capita for medical care in the more prosperous counties would represent 3 per cent of actual cash income.

". . . . the factors which tend to lower the economic status of the rural South as illustrated in three representative counties are again cited. (1) The per-capita spendable money is almost unbelievably low. (2) Cotton is recognized as the chief and frequently exclusive 'cash' crop. Many of the operators of farms are known as 'share-croppers,' a term which signifies that they are tenants who are permitted to cultivate land on condition that they pay the landowner a certain fraction of the crop which they produce. A year of unfavorable weather conditions or a lowered market price for cotton creates severe financial depression in the area, and the purchase of medical care goes by the board with many other purchasable commodities. (3) Negro population, largely concentrated in the South, tends not only to lower economic and educational averages but to increase materially the incidence of and mortality from certain communicable diseases and the need for medical care.

"This study shows the depressing effects of poverty in the 'South.' But does it not also show that with no panacea for poverty there is more suffering—for lack of medical care—than there need be? Three distinct conclusions may be drawn from the data presented: (1) An insufficient amount of money is being spent for medical care. (2) Much that is spent represents unwise expenditure. (3) Individually and unaided, the inhabitants of the 'South' considered as a whole cannot solve the problem of finding money to support adequate medical facilities. Although the study was not inaugurated to effect—or even suggest—reforms, some method of collective purchase seems indicated as a palliative for the conditions revealed by this survey. Without financial subsidy from sources outside the state or county to supplement local resources it does not seem even probable that all residents of the 'South' can be assured adequate preventive and therapeutic care." (p. 137-140.)

THE VERMONT SURVEY *

The State of Vermont, *in extenso;* Franklin County (the typical county in the State), population 29,975; Orange County (representative of sparsely settled rural areas in the State), population 16,694.

". . . . The survey reveals that more than 2 per cent of the gainfully employed residents of Vermont are engaged in the provision of medical care—whether as private practitioners, as public servants, or as employees of a practitioner or an institution." (p. 311.)

" In areas in the state of which Franklin County is representative, ... physicians are numerically sufficient to meet the ordinary needs of the people and, by current standards, many of these physicians are adequately trained. Yet many of them practice without the technical advantages afforded by a hospital; most of them utilize modern laboratory procedures but little, and here, as is largely true of all parts of the United States, their work is almost entirely concerned with the cure and not with the prevention of disease. The financial returns of one-half the physicians can hardly be satisfactory to them. They give their services without charge to considerable numbers of patients." (p. 312.)

" In Orange County the number of active physicians seems adequate to meet the local demands, especially when the proximity of physicians and of facilities in bordering counties is taken into account. . . . . . The relatively low economic level of the community provides a definite and serious barrier to the utilization of available medical agencies. . . . . The practice of many physicians brings only modest financial returns.

". . . . Some physicians, anxious for postgraduate training, say that they have neither the money nor the freedom from professional responsibility to their community to permit them to go away for even short courses. . . . ." (p. 313.)

" Like the physicians, dentists are concentrated in the larger urban centers. It is probable also that the quality of dental care in the rural districts is not so high as in the urban areas. The results of this survey indicate that in Vermont, as is generally true elsewhere, dentists on the whole are not used to their full professional capacity, and that they, like other practitioners, work under conditions which are not conducive to keeping abreast of current advances in the technique and theory of their profession. Their average income is moderate, yet they donate their services to, or reduce their charges for, a considerable number of persons.

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* See Publication No. 13, listed at the end of this volume.

" The economic status of the nursing profession is unsatisfactory. Private duty nurses spend a considerable portion of the year waiting for employment. The competition of practical nurses, who charge less and who are willing to take rural cases and to supplement their professional activity by housework, partly explains the lack of employment for graduate nurses. There is obviously an oversupply of nurses with a consequent decline in morale and enthusiasm on the part of the graduate nurses who, after spending three years in training, find themselves unable to earn a satisfactory livelihood. Here, as in certain other professional fields in which women predominate, the situation is conditioned by the competition between those who are and those who are not entirely dependent upon their earnings for their income." (p. 314.)

" In Vermont, as elsewhere in the United States, the consumption of drugs and medicines (the expenditure is about $6 per capita) represents a problem of such enormous magnitude and complexity as to defy analysis in this report. . . . .

" With 8 hospital beds per 1,000 persons for the state at large, Vermont cannot be said to have an insufficient number of beds. . . . . The absence of out-patient or clinic activities in the hospitals indicates either that ambulatory patients of the lower economic groups are not receiving needed medical care or that they are being cared for by private practitioners without charge." (p. 315-316.)

" A survey of public health activities indicates clearly that, for the state at large and for local areas, the problems of sanitation are on the whole reasonably well solved. The laboratory service provided by the state department of health is also reasonably satisfactory. . . . .

" On the other hand, there are serious inadequacies in the extent to which the work of the state department of health has been developed in the fields of general communicable disease control, the prevention of venereal diseases, infant and maternity hygiene, preschool and school hygiene, and the development of popular health instruction. . . . .

"At the same time, it must be recognized that the funds now available to the state health department are woefully inadequate to permit an extension of activities sufficient to bring them up to reasonably good practice. . . . ." (p. 317.)

"In this connection, it is of further interest to recall . . . . . the amazing lack of proportion between the expenditures in the state for the care of nervous and mental patients and the feeble-minded ($880,307, or $2.45 per capita) and the expenditures for official public health work ($110,855, or $0.31 per capita).*

"At least 30 per cent of the total expenditure for the care of illness is practically wasted because spent for self-medication or inferior types of practitioners. If the public could be educated to expend its money more intelligently, some of its medical problems would be solved.

". . . . It is of vital concern to the people that rural practice should be made sufficiently attractive to assure an adequate supply of competent physicians. . . . . however satisfactory the conditions may be for the urban dweller in the state, the rural citizen receives little and in some places almost no preventive medical care and in general receives less diagnostic or therapeutic care than his needs would seem to require." (p. 318-319.)

". . . . To illustrate the extent to which the costs of sickness fall unevenly upon a population, two types of examples may be cited: (1) Of approximately 1,300 rural families . . . . 50 per cent of the families paid 90 per cent of the total costs of medical care incurred by all the families. About 3 per cent of the families reported no expenditures for medical care, 8 per cent spent less than $5 each, and, at the other extreme, 5 per cent paid $250 or more. (2) For the same families, the average expenditure for doctors of medicine was $28; but for those families which used physicians, the average was $35. The contrast is more marked with respect to expenditures for hospitals. Thus, the average expenditure for hospitalization was approximately $14 for all families; but it was $89 for families which used hospitals. Moreover, the unevenness of sickness costs is accentuated when the families in outlying districts must pay mileage charges in addition to the normal charges of the physicians.

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* This figure does not include the cost of tuberculosis institutions and similar items, sometimes included in state expenditures for public health work.

". . . . the people of Vermont are not receiving the medical care which they need and . . . . this is primarily due to the fact that many families cannot make the necessary expenditures. The common belief that the poor receive necessary medical care is not supported by the survey, in spite of the extensive provision of free services by physicians and in spite of expenditures for indigent persons by towns. The group which suffers most is composed of people with small resources who desperately struggle to maintain financial independence. Because they are unable to pay doctors or dentists, they postpone seeking medical advice and attention. Sometimes when they eventually call a practitioner they are refused attention if a bill for a previous illness remains unpaid. . . . ." (p. 320-321.)

The Shelby County Survey *

Shelby County, Indiana; population (1930) 25,030; population of Shelbyville, the largest city, 10,602.

" The physicians of Shelby County, supplemented by specialists in Indianapolis, appear to be sufficient to meet the demands made upon them. There is a constantly improving standard of service, according to one physician, and an increasing demand for quality of service due to the education of the layman.

" In the course of this inquiry no evidence appeared which might indicate that many people in the community are prevented from consulting physicians for ordinary illness because of the charges involved. Provision for indigent persons is made out of public funds. The economic factor is of importance, however, when surgery is necessary. For, while the fees of local surgeons may be low by comparison with those charged in other communities, they are in themselves sufficiently high to impose serious financial burdens upon the patient or family. . . . .

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* See Publication No. 6, listed at the end of this volume.

". . . . The demand for dentists is not determined by the number of people with defective teeth but by the small proportion of this number having the desire and the means to pay for proper dental attention. . . . . the supply of dentists appears to be adequate to the needs of that portion of the people who want dental service and are able to pay for it. . . . . " (p. 141-142.)

" What are the outstanding needs of the county in regard to dental facilities? The first need, according to the comments of several dentists, is a clinic for school children whose parents cannot afford to have their children's teeth cared for. . . . . " (p. 143.)

" There appears to be no doubt that more education and publicity are needed to induce people to take proper care of their teeth. . . . .

" Registered nurses can be readily obtained in Shelby County by those able to pay for them but are little used for home nursing. Practical nurses can also be secured, when needed, throughout the district. The indications are that registered and practical nurses would be used more extensively were it not for financial considerations. . . . .

" Shelby County as a whole does not suffer from any shortage of pharmacists. The lack of pharmacists in certain communities might entail inconvenience were it not for the fact that the physicians outside Shelbyville do practically all of their own dispensing.

". . . . The people of Shelby County . . . . are still in the drug-taking age as far as the treatment of illness is concerned. Their faith in the efficacy of bottles of brightly-colored medicine is strong. . . . . The people want medicine, expect it, and . . . . if the doctor does not give it to them, even though he may have given them far more valuable service in the way of advice, they feel dissatisfied and in some measure cheated." (p. 144-145.)

". . . . Poor people residing in Shelbyville have no difficulty in receiving hospital care. . . . .

" The hospital facilities provided by the state in its various institutions are not sufficient, so that Shelby County, among others, suffers. . . . . " (p. 146.)

" The Major Hospital * has . . . . a very low occupancy rate. . . . . Is it that, on the basis of physical need, there are too many beds? Probably not, for, considering only the numbers of maternity and tuberculosis patients in the county, there is a considerable opportunity for hospitalization not at present receiving attention. There are also the convalescent and chronic patients customarily cared for at home in Shelby County. Hospital charges and the ability of the patients to pay also affect the situation. Many persons for financial reasons prefer to remain at home rather than to go to the hospital. Moreover, certain habits of the community must be considered. For example, it has been customary in Shelby County for babies to be born at home. With changing habits in this respect, the use of the Major Hospital for obstetrical purposes might increase considerably. Undoubtedly the proximity of Indianapolis is an additional explanation—the glamor of a city hospital and a big city specialist has its attraction." (p. 146-147.)

" There are no clinics in Shelby County apart from the private diagnostic clinic and the free tuberculosis clinic held quarterly. The managing director of the Major Hospital advocates the early establishment of an out-patient department in the Major Hospital, supervised and served by the staff physicians. This . . . . would tend to prevent patients from drifting into the hands of unethical practitioners." (p. 148.)

" At the present there is an enormous amount of public health work waiting to be done. . . . . With the existing state laws governing the remuneration of health commissioners, a satisfactory solution in Shelby County seems improbable. A physician receiving only $402 as his yearly salary as county health officer cannot reasonably be expected to devote much time to the performance of his duties. . . . . With a full-time officer and an additional public health nurse many activities which are at present lacking or being done on too small a scale could be carried on or expanded." (p. 148.)

" . . . . Many considerations, economic, political, and psychological, affect the thousands of individual decisions that make up the financial picture which has been presented in the text and which is graphically summarized in Figure 5.†

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* The only local hospital in the county.

† Figure 5 of the original report is reproduced here as Fig. 38, to show the complexity of medical agencies which serve the people in even a small and semi-rural county.

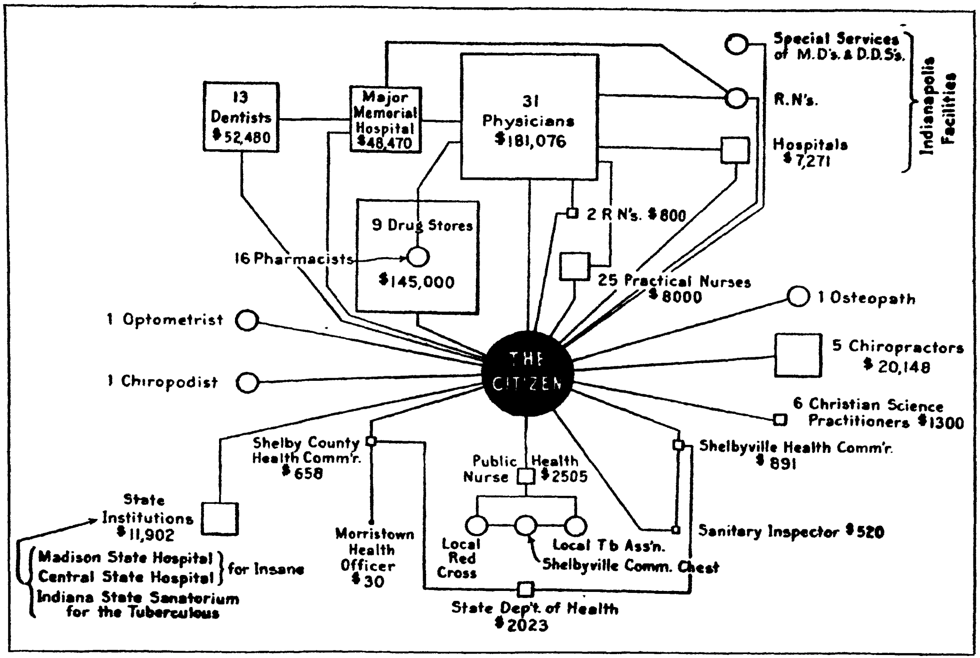
Special Services of M.D's. & D.D.S's.
R.N's.
Hospitals $7,271
Indianapolis Facilities
13 Dentists $52,480
Major Memorial Hospital $48,470
31 Physicians $181,076
9 Drug Stores
16 Pharmacists
$145,000
2 R N's. $800
25 Practical Nurses $8000
1 Osteopath
5 Chiropractors $20,148
6 Christian Science Practitioners $1300
1 Optometrist
1 Chiropodist
THE CITIZEN
Shelbyville Health Comm'r. $891
Shelby County Health Comm'r. $658
Public Health Nurse $2505
State Institutions $11,902
Madison State Hospital
Central State Hospital
for Insane
Indiana State Sanatorium for the Tuberculous
Morristown Health Officer $30
Local Red Cross
Local Tb Ass'n.
Shelbyville Comm. Chest
Sanitary Inspector $520
State Dep't. of Health $2023

FIG. 33. THE MEDICAL FACILITIES OF SHELBY COUNTY, THEIR COSTS IN 1928, AND THEIR RELATIONS TO ONE ANOTHER AND TO THE COMMUNITY

The area of each square is proportional to the cost of the service represented. The circles indicate that certain data were unavailable or confidential.

This figure is reproduced from the original report to illustrate the complexity of medical facilities even in a small community.

" Only by an intelligent consideration of the problem as a whole, however, can wasteful expenditure be eliminated and the best returns obtained for the money spent, not only in Shelby County, but in any other community. To induce each person to make his medical expenditures on the basis of what is the best scientific knowledge at the time—that is one phase of the problem; to provide the best and most economically organized service available—that is the other phase." (p. 157.)

THE SAN JOAQUIN COUNTY SURVEY *

San Joaquin County, California; population (1930) 102,940; population of Stockton, the largest city, 47,963.

" From all evidence collected, it appears that San Joaquin County is adequately supplied with the services of private practitioners, at least in so far as the number of individuals engaged is concerned. For physicians, this is true both of general practitioners and specialists. Likewise, no evidence was found to indicate that the number of dentists in the county is inadequate. However, it is believed that the public as yet does not recognize the importance of dental care for children and is not prepared to pay for these services at the rates which prevail for adults. Hence there is no inducement to specialists in dentistry for children to establish practice in the county, and much of the work now done for children by the family dentist is of casual quality.

" . . . . . With minor exceptions, the physicians and dentists of San Joaquin County have declared themselves on the whole content with the financial remuneration for their professional services. The same is generally true of institutional and public health nurses. Quite a different situation prevails among private duty nurses, however. The major cause of discontent among these nurses is the low annual income which results from their long periods of enforced idleness while awaiting calls. Possibly a factor in this situation is the low cost of hospital services. In many instances it is no more expensive for a patient to receive board, lodging, and general nursing care in a hospital than to engage a private nurse for 12-hour duty at home. However, the main causes of low financial re-

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* See Publication No. 12, listed at the end of this volume.

turn from nursing are the overcrowded condition of the profession and lack of organization for the provision of nursing care. Perhaps the establishment of one or more strategically located nurses' registries would contribute toward the solution of some of the nursing problems, particularly if these registries provided the means of supplying hourly nursing." (p. 14.)

" San Joaquin County has too many hospitals. Although the total number of 809 * beds in all the hospitals does not appear to be excessive for a population of 100,000, the distribution of the beds is so poor that there is an overcrowded situation in the tax-supported institutions,† and very low rates of occupancy prevail in most of the private institutions. . . . . In general, however, it may be stated that hospital care is available to all in the county who need it. Costs per patient-day in the several hospitals vary widely, yet charges ‡ for hospital care are highly uniform.

" A significant development in community care of the sick is presented by the San Joaquin General Hospital which, although a county institution, ostensibly for indigent patients, offers hospitalization to all county residents. At the time of the survey, however, it was clearly evident that the patients in this hospital were persons eligible to care under its charter ' to receive the indigent and the poor.' This hospital, operating at a 100.9 per cent occupancy rate, provided 51 per cent of the approximately 230,000 patient-days of care furnished in 1929 by all hospitals in the county. It is estimated that of a total of 11,000 patients treated in all hospitals of the county during the year, approximately 4,000 were hospitalized in this institution." (p. 14-15.)

" San Joaquin County is one of the counties in the United States in which the administration of the official public health work is conducted by a full-time personnel. It is also one of the few counties in which all the activities of an official health department are conducted with jurisdiction over the urban as well as the rural areas. . . . . It is significant that the total

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* Including 50 beds in a hospital for mental patients (Clark's Sanatorium) closed in December, 1929.

† The San Joaquin General Hospital which runs at an occupancy of more than 100 per cent is a striking illustration of the overcrowding of publicly supported institutions.

‡ This refers to private hospitals. In the tax-supported institutions services are practically free.

budget of the health district represents only $1.02 per capita in a total of $36.09 for all medical care in the county. . . . . With the establishment of the Local Health District, the activities have been enormously increased without a comparable increase in costs.

". . . . of the total of 98 pharmacists a maximum of only 10 to 15 would be needed to fill all the prescriptions compounded in drug stores during 1929 if these pharmacists devoted their full time to professional activities. . . . .

" The costs of medical supplies purchased in drug stores in 1929 amounted to $6.75 per capita. The larger portion of this amount was not for medical prescriptions, but for home remedies and patent medicines. In this county as elsewhere the problem of patent medicines is acute. . . . .

" In a day when the country practitioner faces difficulties of an unusual nature, we find that in San Joaquin County, side by side with the traditional country doctor, a new kind of country doctor has developed. From Chapter XIV [of the original report], in which ' The New Country Doctor ' paints his own picture, it is apparent that by the development of professional and financial relationships more appropriate to the time and occasion than those of the traditional rural practice, a country doctor—practicing in a moderately well-to-do population and in an area with good roads—can and does organize his professional activities on a modern and satisfactory basis. (p. 16-17.)

". . . . the total number of persons who received some dental care during the year is approximately 41,000. It is hardly to be implied that all of the 41,000 persons who saw a dentist in 1929 received all the treatment they required, but even if they did there would still be approximately 60 per cent of the total population who received no dental attention or supervision. . . . . the major portion of those who did not consult a dentist during 1929 probably needed some dental treatment. It is, therefore, reasonable to conclude that the residents of the county are not receiving all the dental attention they need and that many who presumably require care are receiving none whatever." (p. 19.)

THE PHILADELPHIA SURVEY *

Population in 1930, 1,950,961.

" A graphic summary of all the individuals or agencies engaged in providing medical care in Philadelphia is shown in Figure 12 † which can, of course, show only a limited number of the relations between various organizations and individuals. Nearly all the facilities impinge upon one another and are directly or indirectly interrelated. Hospitals are served by physicians, by dentists, by nurses, by osteopaths, and by the department of public health, and they in turn serve each of these groups. The city government of Philadelphia in its health contacts with individuals assumes many guises: it may function as a division of the Bureau of Health, as the Department of Public Works, as the Bureau of Hospitals, as the Police Department, as the Municipal Court, or as the Board of Public Education. Many of the other groups have equally complex sets of relationships." (p. 257.)

". . . . an appraisal was made of the public health activities of the metropolis. Some of these activities are exclusively under the jurisdiction of the city health department or some other single agency. Most of them, however, are carried on cooperatively by a large number of official and voluntary groups. . . . ." (p. 259.) [There follows a statistical appraisal, showing the uneven volume and quality of public health activities.]

" The hospital facilities of Philadelphia have apparently developed without effective community planning. There are, it seems, more facilities in general and special hospitals for acute illness than are needed to meet the demands of patients, and average occupancy rates as a consequence are low. Hospitals for nervous and mental, tuberculous, convalescent, and chronic patients, on the other hand, provide too few facilities to meet the estimated needs. Patients suffering from these conditions find it difficult to obtain care—many of them have to wait for admission or must be cared for inadequately at home or at unnecessary cost in hospitals for patients with acute illness.

" From the fragmentary information at hand, there is an apparent lack of thorough follow-up work among patients

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* See Publication No. 9, listed at the end of this volume.

† Figure 12 of the original report is reproduced here as Fig. 84 to show in graphical form the enormous complexity of the medical provisions in a large city.

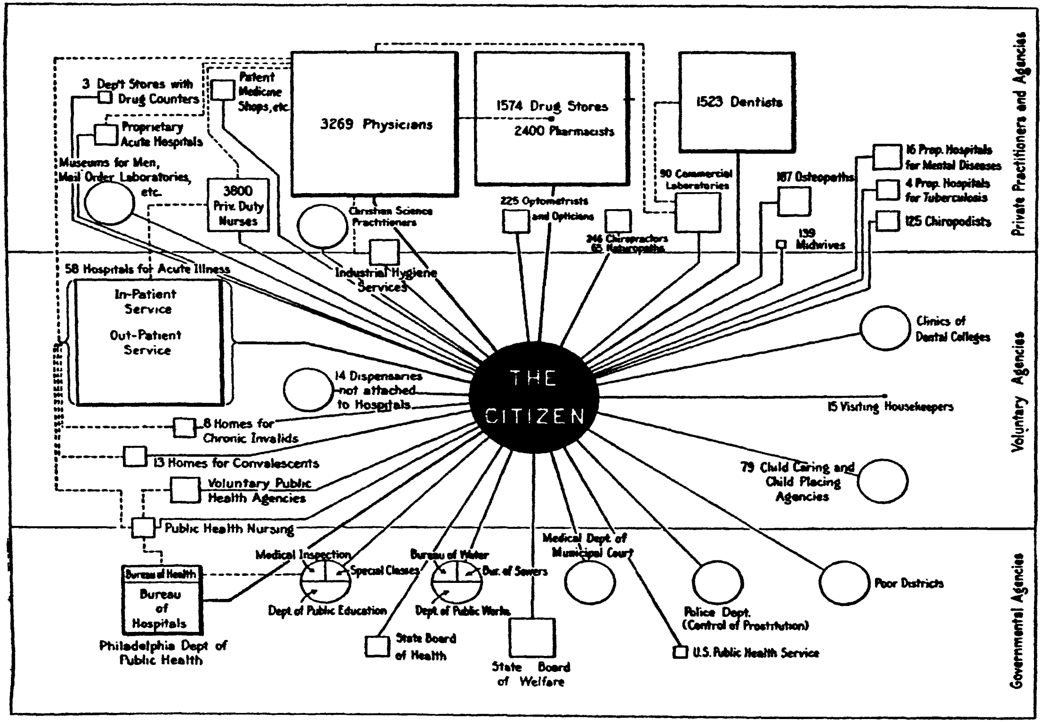
Private Practitioners and Agencies
Voluntary Agencies
Governmental Agencies
THE CITIZEN
3 Dep't Stores with Drug Counters
Patent Medicine Shops, etc.
3269 Physicians
1574 Drug Stores
2400 Pharmacists
1523 Dentists
Proprietary Acute Hospitals
Museums for Men, Mail Order Laboratories, etc.
3800 Priv. Duty Nurses
Christian Science Practitioners
225 Optometrists and Opticians
246 Chiropractors 65 Naturopaths
90 Commercial Laboratories
187 Osteopaths
139 Midwives
16 Prop. Hospitals for Mental Diseases
4 Prop. Hospitals for Tuberculosis
125 Chiropodists
58 Hospitals for Acute Illness
Industrial Hygiene Services
In-Patient Service
Out-Patient Service
14 Dispensaries not attached to Hospitals
Clinics of Dental Colleges
15 Visiting Housekeepers
8 Homes for Chronic Invalids
13 Homes for Convalescents
79 Child Caring and Child Placing Agencies
Voluntary Public Health Agencies
Public Health Nursing
Medical Inspection
Special Classes
Dept of Public Education
Bureau of Water
Bur. of Sewers
Dept of Public Works
Medical Dept of Municipal Court
Bureau of Health
Bureau of Hospitals
Philadelphia Dept of Public Health
State Board of Health
State Board of Welfare
Police Dept. (Control of Prostitution)
U.S. Public Health Service
Poor Districts

FIG. 34. THE MEDICAL FACILITIES OF PHILADELPHIA, THEIR COSTS IN 1928, AND THEIR RELATIONS TO ONE ANOTHER AND TO THE COMMUNITY

The area of each square indicates the proportional share of the total $53.89 per capita which is spent by "The Citizen" for the particular service. The circles indicate that certain data were unavailable.

This figure is reproduced from the original report to illustrate the enormous complexity of medical facilities in a large city.

discharged from hospitals. An appreciable proportion of discharged patients were found . . . . who were not benefitting fully from the services given them in hospitals, because they had not been adequately instructed regarding the nature of their diseases or the methods of preventing contagion, or because they lacked understanding, equipment, or facilities for proper care. . . . .

" A number of hospitals have no social service departments and in most of the others the ratio of social workers to ward and dispensary patients is lower than scientific standards permit.

". . . . certain services, such as health examinations for adults, are not extensively available and . . . . the work in many clinics suffers because of lack of adequate clerical assistance and incomplete records. On the other hand, many doctors have stated that, in their opinions, dispensary facilities are overdeveloped and are infringing upon the proper fields of the private physician. Dispensary services, however, tend to concentrate in the recognized specialties and to that extent do not compete with general practitioners. . . . ." (p. 261.)

". . . . From the reports received, it is apparent that most physicians, especially general practitioners, are working long hours, and this may indicate an inadequate supply.

" Philadelphia physicians, as a whole, appear to be well trained. . . . .

" Specialism is extensively developed. Nearly two-thirds of the doctors partially or wholly limit their practice. Many of the complete specialists began the practice of their specialities without any previous experience in general practice and most of them spent less than five years in general practice." (p. 262.)

". . . . The average figures indicate that the specialist has spent more time in his education, has a shorter working week, and receives a larger income than the general practitioner." (p. 262-263.)

". . . . whether a general practitioner is willing or not to treat a specific ailment, his patients, weaned from the idea of consulting only the 'family physician' on questions of health, frequently go direct to a specialist. . . . .

" What then is the rôle of the metropolitan general practitioner? Cynics might say that his only remaining function is to refer patients to specialists. It is not infrequently suggested, however, that he serve as a coordinator of various points of view—an umpire among specialists—that he care for obstetrical cases and for the minor ills which are responsible for perhaps three-fourths of the calls on physicians, and that he personify and perpetuate the close personal bond with the patient which inspires the confidence so often necessary for recovery from illness. Preventive medicine is also suggested as a vast potential field awaiting his endeavor. The data presented in this report indicate that the general practitioner (especially the pediatrician who is, in one sense of the word, a general practitioner for children) is now entering this field." (p. 264.)

". . . . It is obvious that the people of Philadelphia are not obtaining dental care in the amount required by the best scientific standards." (p. 265.)

". . . . These data all suggest that the poorer economic groups are not receiving dental attention which meets even moderate scientific standards. The failure on the part of the poorer families to receive health service appears more striking in the field of dentistry than in that of medicine. But it should constantly be borne in mind that under existing conditions physicians' services are provided to the lower economic groups by hospitals and by health departments to a greater extent than are the services of dentists." (p. 266.)

"In the very multiplicity of agencies and individuals concerned in the provision of medical care in Philadelphia lies, perhaps, an outstanding weakness of the present system. It may well be that, from the social standpoint, the greatest need of the city is not for more practitioners, not for more hospital or institutional beds, not for more public health activities, but for the organization and coordination of all medical facilities in the city so that each may render its greatest usefulness to the public and may cooperate most effectively with all the others. Philadelphia apparently needs an agency to coordinate all medical activities and to assure a more intelligent and more effective utilization of the $103,000,000 now spent for medical care." (p. 267.)

SOME FURTHER OBSERVATIONS FROM THE COMMUNITY SURVEYS

The statistical records and the conclusions to which they lead are, in the nature of the case, cold and lifeless. Human beings appear in the records only as numbered practitioners or patients; the daily experiences in hospitals—birth and death, pain and tragedy—all disappear and are lost from sight. Yet without these and an understanding of them the statistical facts and the deductions from them are only a shell of the reality.

Those who conducted the surveys saw and came to appreciate the complexities of that which we summarize in the phrase "the costs of medical care." Working in close and intimate contact with actual or potential patients, with physicians, dentists, nurses, pharmacists, midwives, osteopaths, chiropractors, faith healers and others, they learned to recognize that they were dealing with human passion and prejudice and that these qualities are of the essence of the issues. A few of their informal records are introduced here to illuminate the dark places.

In one of the cities studied, three young physicians, all of whom had received excellent training, established a group clinic. So keen was the jealousy among several of the older men that they endeavored to persuade a surgeon from another community to establish himself in the town in order that they would not have to refer their work to the new clinic. The surgeon did not accept the invitation, but—in the survey year and even now—several physicians do not use the surgical laboratory and X-ray talents and facilities that are available at the clinic, in spite of the fact that the clinic provides the best service available within forty miles. Instead, they refer their X-ray work to a local practitioner of doubtful attainments or to the local hospital. The quality of the interpretative comments which they receive on their X-ray photographs is far below what they could obtain from the roentgenologist at the clinic.

The quality of medical care which the physicians are competent to provide in some places leaves much to be desired. In two of the surveyed areas—in the words of a physician of the survey staff—"It is terrible." One of the reputable doctors in ——— County reported that when he came to the county, about 1923, several local physicians did not know the significance of a white blood count. They have gradually learned this during the last few years, and in 1929 one physician was ordering blood counts for his patients on the slightest provocation.

In one of the surveyed cities the investigator found "practitioners who are apparently the equal of many of the best in larger communities; they are well trained and thoroughly competent. On the other hand, there are in the same city some part-time physicians who, on account of poor training, advanced age, and obviously careless methods of work, are a distinct menace to the health of the community. They have no acquaintance with preventive medicine and are dwelling, medically speaking, in the nineteenth century. They have not developed habits of work which would help to keep them abreast of the times. Their procedure is to make a cursory examination and give the patient a bottle of medicine—that is their notion of the practice of their profession. The same general remarks would apply to many dentists."

In some places competition between the various groups of practitioners is intense. The physicians compete with the dentists, the osteopaths, the chiropractors, the nurses, the health departments, and even with the hospitals. The dentists, osteopaths, and chiropractors resent what they consider to be the unfair attitude of the physicians. Competition between the physicians and dentists is not always evident, but the dentists sometimes remark that some of the physicians refer patients to dentists only after they have exhausted the resources of the patients, when, as a matter of fact, the whole illness of the patient is probably the result of pathology in the oral cavity. Competition between physicians and nurses is found to work in an obscure way: if a patient is nursed by a practical rather than by a graduate nurse, funds are left to pay the doctor. Similarly in the case of hospitals, for example, if a maternity patient is delivered at home the cost is less and the physician's bill can be more readily met.

But the problem is not so simple as this might indicate. One physician competes with another and this situation gives rise to unfortunate results to both the patient and to the practitioner. Physicians are loath to take vacations or postgraduate courses; they fear that by leaving their localities for even a brief interval they may lose some of their patients. The same is true of the other groups of practitioners. Competition exists not only among the practitioners but between some of them and the drug stores.

Competition, even in professional circles, has its virtues. But when it leads to unethical conduct, to bitterness among those who should maintain cooperative relations, to unnecessary medical costs, to high pressure selling tactics, to fee-splitting and unnecessary surgery, the disadvantages far outweigh any advantages which might accrue to the professions or to the public.

Yet, in spite of competition between physicians and dentists and nurses and pharmacists there is considerable informal cooperation among them. To fail to recognize this would be to distort the picture. But the cooperation, when it obtains, is at best haphazard.

Objective records show the inadequacy of expenditures from tax funds for the support of community health agencies. But it is not sufficient to recommend that something better should be done. One must keep in mind how closely these matters are interrelated with our system of politics and how often the system is riddled by corruption. The fact that by spending money on public health work great savings can accrue is not generally known to the electorate. The people in many rural and semi-rural areas look upon taxes as an evil, as something to be avoided. Corruption in office, inefficiency, and the lack of effective educational programs, leave them with no realization that they receive financial—as well as other—returns for tax outlays in the prevention of disease. If more money is to be raised in local communities for health work, it will be necessary to convince the public that by paying additional taxes for preventive medicine they are really saving money. A tall order!

In some of the surveyed communities "indigent persons" are nominally a responsibility of the community. In actual fact, they receive medical care only in emergencies. They receive no dental care except extractions and the situation with respect to general medical care and care in such an institution as a poor-farm is in some places appalling. The almost indigent person of limited means in several of the surveyed areas is at least as badly off. He has three choices (1) to put his pride in his pocket, go to a physician (who may refuse him), state his case, and rely upon the generosity of the doctor; (2) to admit he is a pauper and hope that the overseer of the poor will be sufficiently generous to authorize the needed medical care; (3) to go without such care. In spite of the fact that some people are anxious to receive everything they can for nothing, the great mass of the people are anxious to pay their own way. Their independence is their treasure and they relinquish it unwillingly. Multitudes of people throughout the United States are going without medical care because they lack funds and because they will not ask for "charity."

Many services which the physicians are able to render, especially preventive medicine, are not being provided to the people. This is due not only to lack of funds on the part of the public, but also to lack of desire. In addition there is widespread ignorance and apathy on the part of many physicians with respect to preventive medicine. The people recognize the need for medical care when they are in pain or distress; they do not appreciate the wisdom of purchasing medical care when they appear to be well. It seems extremely improbable that preventive medicine will be extensively utilized so long as there is a direct fee for each medical service.

Both physicians and patients are human beings. The physicians are harassed, particularly at the present time, by their economic problems, and they are at loss to know what to do. Many of them are sorely troubled at the sight of suffering which could be alleviated if funds were available or if some means could be devised to bring patient and physician together without loss of self-respect to either.

Even among the physicians who never attempt postgraduate study, there is an almost pathetic eagerness for the newer knowledge. Most of them are ambitious to do their jobs well; but they have neither the time nor the initiative to study by themselves. The crying need in rural districts, so far as the physicians are concerned, is to enable them to make periodic visits to medical centers or to bring postgraduate education to them through visiting lecturers. The almost invariable existence of county medical societies furnishes the machinery; but apathy, local pride, or indifference nullify the opportunity.

CONCLUSIONS FROM THE SURVEYS

These quotations and observations from the several surveys tell their own stories and, it will be obvious to the reader, they tell substantially the same stories. It is a relatively simple task to summarize the findings in very few categories.

1. The people of the United States, as represented in these surveyed communities, are not receiving medical care adequate to their needs or equal to the possibilities afforded by the present state of medical art and science. The most extreme deficiences appear in respect to hospital and clinic care, preventive medicine, and dentistry. In rural and semi-rural areas the current expenditures for medical care are insufficient to support necessary facilities and to provide reasonably satisfactory remuneration to practitioners.

2. In urban areas there is certainly no numerical lack of physicians, dentists, nurses, etc., to meet the present effective demand for medical care, and there may be an excess. This has been a matter of common knowledge for some years; it is confirmed by the data of the surveys.

3. In most rural areas, it now appears, there is also no important inadequacy in numbers of practitioners; but there is (*a*) an insufficiency of competent practitioners, abreast of the times, and trained in the arts of modern medicine, (*b*) an almost total lack of opportunities whereby the rural practitioner can obtain periodic or even occasional postgraduate instruction.

4. Ignorance of their real needs and their true opportunities is especially evidenced by misguided expenditures, particularly (*a*) in the enormous, wasteful, and harmful expenditures for patent medicines, (*b*) in the failure to purchase preventive service from private practitioners, and (*c*) in lack of support for public health agencies.

5. The prevailing methods of purchasing medical care have many unsatisfactory and undesirable consequences. They lead to unwise and undirected expenditures, to unequal and unpredictable financial burdens for the individual or the family, to neglect of health and illness, to inadequate expenditures for medical care, and often to inequable remuneration of practitioners.

6. The outstanding observation is the amazing fact that so much is done, and so much is well done, in view of the widespread waste and the planlessness of effort and expenditure. Physical facilities are duplicated between the hospitals and the offices of practitioners, and are insufficiently utilized in both.

Hospital beds are empty and much of the physician's, dentist's and nurse's time is unoccupied, while many people suffer and die for lack of medical attendance. Misdirected expenditures, competition and excessive specialization among practitioners, the absence of community planning and of integration of services and facilities contribute to extensive waste.

PART V

MEDICAL PRACTITIONERS AND SOME ECONOMIC PHASES OF THEIR PRACTICE

CHAPTER XI

PHYSICIANS: THE PRIVATE PRACTICE OF MEDICINE

The physician is the outstanding practitioner of medicine. The need and the value of his service sets him above all others. He alone, of all types of medical practitioners in the United States, is permitted by law to diagnose and treat all diseases and conditions and to use (with certain minor exceptions) any form of diagnostic or therapeutic technique which he considers necessary, desirable, and within his professional skill.

THE NUMBER OF PHYSICIANS IN THE UNITED STATES

It is estimated that in the United States in 1929 a total of approximately 142,000 practitioners, holding the degree of Doctor of Medicine, were actively engaged in the practice of their profession.* Most of these physicians were men, for women represent a very small proportion of the total number of licensed physicians in the country. In 1904, women graduates of medical schools were 3.4 per cent of the total number. This proportion declined to 2.6 per cent during 1910 and 1915, and has never exceeded the 5.4 per cent recorded in 1926. The number of women graduates represented 4.6 per cent of the total in 1931.†

There appears no conspicuous racial concentration among physicians except to the extent that there is a higher proportion of white practitioners to the white population than of negro practitioners to the negroes in the United States. This concentration appears to result from economic opportunity and only incidentally from social custom or racial traits.

At the end of 1929, of the 142,000 physicians, about 21,000 held full-time salaried positions and about 121,000 were independent practitioners, of whom about 1,000 were partners in private group clinics. The private practitioners and the economic aspects of their practice are the main subject of consideration in this chapter; salaried physicians are discussed in

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* Publication No. 24, listed at the end of this volume, was utilized extensively for material in this chapter.

† "Medical Education in the United States," *Journal of the American Medical Association*, August 29, 1931, Vol. 97, p. 623.

Chapter XIII. For data concerning physicians in private group clinics, and those who are employed by organized medical services, Chapters XXV and XXXI should be consulted.

THE DISTRIBUTION OF PHYSICIANS

A tabulation of the places of residence of the physicians in the United States indicates an uneven distribution throughout the nation, with a wide variation in the ratio of physicians to population from state to state and among various cities and rural areas. At first this concentration seems to be haphazard. One factor, however, appears to determine the location of medical practitioners, namely, the ability to pay for medical care as evidenced by the per-capita wealth or the per-capita income of the people of the community. Wherever a community is financially able to support a physician under present methods of remuneration, there is a physician (or more than one).

The number of physicians in the United States has increased steadily for many years. The increase, however, has been less rapid than the growth in population, so that the ratio of physicians to population has decreased from 173 per 100,000 in 1900 to 126 in 1929. (See Appendix Table 7-A). Although in 1929 there was 1 physician to every 787 persons for the country as a whole, in individual states the proportions ranged from 1 physician to every 1,431 persons in South Carolina to as high a ratio as 1 to every 282 in the District of Columbia, 1 to every 568 in Colorado, 1 to every 573 in California, and 1 to every 621 in New York State.

An inspection of Appendix Table 7-A shows that in every section of the country the ratio of physicians to population has decreased steadily since 1900. If attention be directed to the size of community in which physicians are located rather than merely to their geographical location, one observes also that there has been a progressive concentration of physicians in the larger urban and industrial centers. Appendix Table 8-A indicates that, in the periods 1906, 1923, and 1929, towns with 2,500 or less population and the rural areas always contained somewhat less than the average numerical proportion of physicians to population. The egress of physicians from these smaller towns has been continuous: whereas in 1906 these areas contained 53 per cent of the population and 41 per cent of the physicians, by 1923 they contained but 44 per cent of the population and 30 per cent of the physicians. In 1929 although they contained 48 per cent of the population, they still had but 31 per cent of the physicians of the country. This finding differs from the situation in cities of 100,000 population and over which contained, in 1906, 1923, and 1929, 22 per cent, 27 per cent, and 30 per cent, respectively, of the population and increased from 30 per cent, 37 per cent, to 44 per cent in their percentages of physicians as estimated for the respective years.

However, the foregoing figures which indicate the concentration of physicians in urban districts somewhat overstate the dearth of physicians in rural areas, since they assume that farmers are to be grouped with rural communities and small towns. Areas contiguous to the larger cities—particularly those areas with 5,000 and less inhabitants—have always contained many farmers, who, since they live within two, three, or five miles of metropolitan centers (any city with 25,000 or more inhabitants may be so classified) should, strictly speaking, be considered as part of the population of these cities. These farmers regularly do their shopping and their purchasing of medical care in the larger urban areas and have done so to an increasing extent since the installation of telephones and the increased use of the automobile.

Seven years ago Professor Raymond Pearl * published a comment on the Mayers and Harrison report (of the General Education Board) which discussed the distribution of physicians in the United States. He found that in all sections of the United States the concentration of physicians is almost in direct proportion to the estimated per-capita wealth of the location in which they had settled. This was true not only for entire states but was also true for groups of small cities and country towns. A table showing the concentration of physicians in towns of different sizes was prepared for an earlier publication of the Committee on the Costs of Medical Care. This tabulation shows that whereas in 1929 there were 126 physicians for each 100,000 of the population in the United States,

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* Raymond Pearl, "Distribution of Physicians in the United States," *Journal of the American Medical Association*, April 4, 1925, Vol. 84, p. 1024.

the concentration ranges from as low as 78 per 100,000 in all towns of 5,000 or less to an average of 180 in all towns of 1,000,000 and over, or approximately 185 for all towns of 100,000 or over.

QUALIFICATIONS FOR THE PRACTICE OF MEDICINE

At the present time most applicants for medical licensure are graduates of what are known as Class A medical schools, *i. e.*, schools recognized and approved by the American Medical Association and the American Association of Medical Colleges. Since 1910 the proportion of medical school graduates who had received an A.B. or a B.S. degree prior to, or during, their medical school training has increased from 15 per cent to 66 per cent. During the five-year period from 1910 to 1915, the increase was from 15 per cent to 24 per cent; during the next five-year period the proportion had risen to 43 per cent. The number of medical schools and the number of medical school graduates reached its highest point in 1904 when there were 160 medical colleges and 5,747 graduates of these schools. During the following ten years the numbers of colleges and graduates were greatly reduced through the closing of many of the proprietary medical schools and the shifting of medical education to a university basis. Since 1915, however, the number of medical school students has gradually increased, after having dropped from 25,000 in 1906 to 15,000 in 1915. During the past decade the number of students and the number of graduates have steadily increased until in 1931 the 76 medical colleges reported 21,982 students enrolled and 4,735 graduates for the year.

Some medical schools—11 in all—require that the student must complete at least one year of internship in a hospital approved by the American Medical Association before he may receive his degree of Doctor of Medicine. At the present time, there are in 650 hospitals in the United States approximately 6,000 interns, each of them serving one or two years in the treatment of ambulatory and bed patients. It is interesting to observe that the American Medical Association and the Association of Medical Colleges have insisted that the intern's experience be obtained almost exclusively in the care of hospital cases. This is in part a recognition of the fact that only in hospitals and out-patient departments does the physician see the varieties of illness which will train him to meet emergencies in private practice, and in part a recognition of the fact that only in hospitals can medical facilities and medical organization be adequate to give the intern the type of training which will fit him to enter his calling.*

Licensure requirements vary in the several states in the country, but the professional privileges allowed licensed physicians are relatively uniform throughout the United States. No federal licensure is in effect, and the practice of medicine under the auspices of the Federal Government requires no special type of licensing.

The American Medical Association, the Association of Medical Colleges, and the American College of Surgeons exercise far-reaching and powerful influence upon the qualifications of physicians. Not only through their rigorous standards in medical education, but also in their disapproval of grossly incompetent and unethical practitioners, these societies are devoted to the purpose of maintaining the practice of medicine on a level consistent with the high ideals of the profession. So far, however, these associations have restricted their endeavors to the technical and professional aspects of practice; they have been relatively helpless before the rising tide of economic problems: the overcrowding of the profession in certain areas, the overdevelopment of specialism, and the inequality of income distribution.

THE COSTS OF PHYSICIANS' SERVICES AND THE DISTRIBUTION OF THEIR INCOMES

Estimates of the total cost of medical care in the United States are placed at $3,656,000,000, in round numbers, and the amount received by physicians in private practice in 1929 at $1,090,000,000, or nearly one-third of the total sum spent for all types of medical service. The magnitude of the amount

* It has been suggested that the hospital and clinic experience of the intern or recent graduate who expects to practice in rural areas should be supplemented by a period of service, in the office and in homes, under an experienced general practitioner. He would thus become more proficient in providing medical care when neither trained nurses nor special equipment are available.

spent for the services of physicians is an indication of the paramount importance of these practitioners in the economics of medical care. Yet it by no means follows that the returns accruing to physicians are necessarily high. The total paid to all physicians in private practice in 1929 represents an average gross income of $9,000 per physician, which is equivalent to an annual expenditure of $9 per capita by each person in the country.

Gross Versus Net Income.—To many who are not familiar with the conditions of medical practice, an average gross income of $9,000 a year would seem to place the physician in a most favored financial group. But *gross* income does not by any means indicate the annual amount which an individual physician may spend to house, clothe, and feed his family, to educate his children, and to maintain a standard of living consistent with a position of professional importance in a community. After the physician has deducted the expenses of his practice—the cost of maintaining and equipping his office, the operating expenses of his automobile, his dues to professional societies, and his subscriptions to journals which keep him abreast of modern progress in medicine—only $5,300, on the average, remains as real or net income. Thus nearly 40 per cent of the earnings of medical practitioners is consumed by professional expenses. In the discussion which follows, sometimes gross income is used, sometimes net, and sometimes both, according to the form of the data which served as source material. But always when gross income is given, it should be remembered that, in general, 40 per cent is required to cover the necessary expenses of the physician's practice.

An average income, moreover, conceals all individual differences. Actually, professional gross incomes of private practitioners range from less than enough to meet professional expenses to amounts even greater than $100,000 a year. Many factors—years of experience, geographical location, size of community, degree of specialization, and personal qualifications—influence the income of the individual physician. When all these factors are integrated to produce optimum conditions, and when a physician combines the intangible assets of skill, reputation, and personality with sound business acumen, his income may be very high as judged by usual standards. But for every physician who receives more than $10,000 as annual net income, there are two who receive less than $2,500. It will perhaps be of interest to survey briefly the factors which cause such extreme variations in financial returns from the practice of medicine.

Variation of Income With Years of Experience.—Viewed from a purely business standpoint, the doctor of medicine starts his career under a handicap. His education and training are on the whole more costly than that of the average college graduate and he must spend from three to six years more in formal non-remunerative study than does the usual business man or even the average professional man. Moreover, even after graduation from medical school and completion of internship, the young physician has a long and precarious apprenticeship ahead. He must weigh the relative merits of various possible locations for the initiation of his practice; he must have funds available for the equipment of his office or for the purchase of

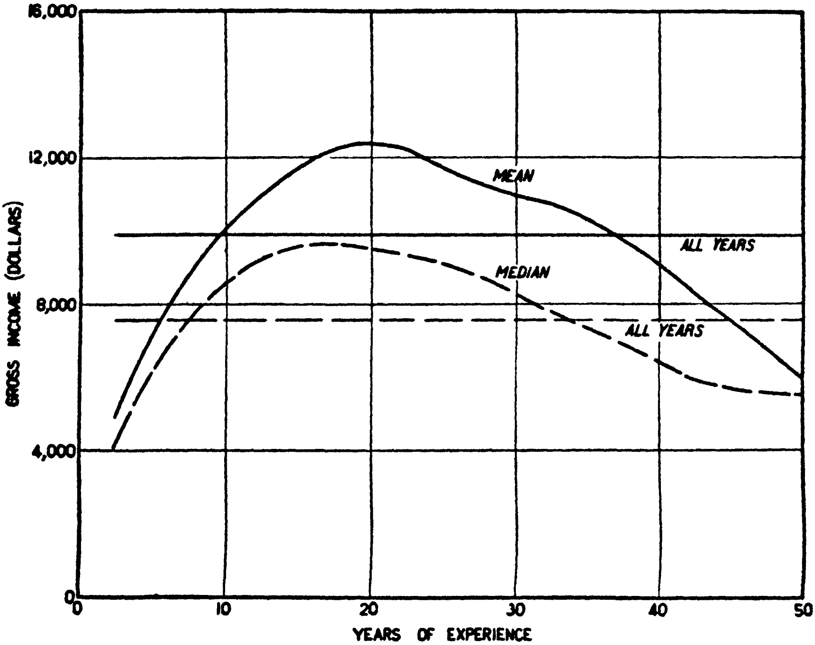

FIG. 35. MEAN AND MEDIAN GROSS INCOMES IN 1929 OF PHYSICIANS IN PRIVATE PRACTICE, ACCORDING TO YEARS OF EXPERIENCE

the good will of some retiring physician; and he must expect a long period of waiting before his income from services to patients will be sufficient for his livelihood.

Under existing conditions, seven or eight years elapse before the gross income of a young physician reaches the average level for all practitioners. In Fig. 35 are set forth the mean and median gross incomes of physicians according to their years of experience. It will be noted that the peak of gross income is reached at about the seventeenth or eighteenth year of practice. Beyond this point incomes tend to decline, and at about the thirty-fifth year of practice the incomes are approximately the same as in the eighth year.

For net incomes, the first year of private practice normally entails a loss. In the second year the margin of net income is very small, and it is not until the third year that the young physician has an average net income of $1,700 or $1,800. By this time he is about 31 years of age.

Geographical Variations in Income.—Variations in the average gross incomes of physicians are apparent when physicians are grouped by geographical sections of the country. The gross income of private practitioners in the Pacific States is higher than the average for all sections of the country, and the same is true of New England and of the Middle Atlantic States. The East and West South Central States, on the other hand, are well below the average for the country as a whole in the financial prospects which they offer a practitioner of medicine. These two sections are not densely populated, are predominately agricultural, and have relatively low per-capita spendable money (maximum $573 for Texas, minimum $239 for Mississippi, in contrast with California, $1,186; New York, $1,328; Massachusetts, $1,131; and Maine, the lowest New England State, $657).* The geographical factor is closely correlated with the industrialization and urbanization of the various sections of the country, for upon these two influences depend the relative incomes of all members of the population, physicians included.

The Effect of Size of the Community.—In communities under 5,000 in population, the average gross professional income of physicians in private practice was less than $5,300 in 1929, a figure less than one-half the average income for physicians in all other population groups combined. In the 5,000 to 10,000 population group the average gross income rises to about $8,900, in the 10,000 to 25,000 group it reaches $10,400, and in cities of 25,000 to 50,000 the average is $11,100. In communities of more than 25,000 inhabitants, the differences in average gross income are not significant; that is, an increase in the size of city beyond this point does not necessarily mean an increase in the average income of physicians. With the exception of a very few high incomes which unduly influence the mean, the physicians in cities of 1,000,000 inhabitants and over are apparently not the most favored financially. The median gross income of physicians is highest for the population group comprising cities between 25,000 and 50,000, where it is $9,308. In the next highest population group (from 50,000 to 100,000), the median drops to $8,950, and for cities of 1,000,000 and over it is only about $8,250.

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* Figures for 1929; *Sales Management,* "Markets and Media Reference Number" (McGraw Hill Publications, New York), September 27, 1930.

The median net income ranges from a minimum of $2,500 in communities of less than 5,000 persons to a maximum of $5,600 in cities of 25,000 to 50,000 inhabitants. The lowest median net income is obtained by physicians in rural communities with less than 5,000 residents ($2,500 per annum); the highest accrues to physicians in moderate-sized cities of 25,000 to 100,000 inhabitants ($5,500 to $5,600). For cities of 1,000,000 and over, the median net income is approximately $4,700, or only about $200 more than the median in communities with 5,000 to 10,000 population.

A significant contrast between the relative magnitude of professional expenses in a rural as distinguished from an urban population is illustrated in one of the Committee's surveys of three representative counties in the South.* In Tupelo, the county seat of Lee County, Mississippi, a town of 6,361 inhabitants, the physicians reported their expenses as 38.1 per cent of their gross returns, an average not significantly different from that of physicians in the country as a whole. In the rural sections of Lee County, however, expenses of practice consumed, on the average, much higher proportions of the physicians' gross income. A rural practitioner has a smaller percentage of office visits than has a city physician, and consequently much of his time must be spent in travelling to and from patients whom he attends in their homes. Moreover, in thinly settled rural areas, the physician must act as pharmacist and keep on hand a large stock of drugs and medicines to dispense to his patients. In the event that he fails to collect his fees for services to his patients, he loses not only remuneration for the time he has spent but even the money he has paid for pharmaceutical supplies.

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* See Publication No. 28, listed at the end of this volume.

Physicians' incomes are subject to such wide dispersions that neither the arithmetic means nor the medians are typical.

TABLE 42

DISTRIBUTION OF PHYSICIANS WITH NET INCOMES OF LESS THAN $2,500, ACCORDING TO SIZE OF COMMUNITY

Size of Community	Number of Physicians	Per Cent of Total in Community
Less than 5,000	18,500	50
5,000 to 10,000	2,300	29
10,000 to 25,000	2,100	24
25,000 to 50,000	1,400	21
50,000 to 100,000	1,700	22
100,000 to 500,000	5,100	23
500,000 to 1,000,000	2,500	28
1,000,000 and over	6,400	29

For example, one-half the physicians in communities of less than 5,000 persons have gross incomes of less than $4,400, or net incomes of less than $2,500. When all the physicians with net incomes of less than $2,500 are tabulated according to the size of the community in which they practice, the distributions shown in Table 42 result.

The tendency for physicians' incomes to vary with size of community is apparent in all sections of the country. The incomes of rural practitioners are everywhere lower than those of urban physicians. However, the contrast between the smaller and the larger communities is not so great in some sections as in others. The disparity is greatest in sections of the South (East South Central and West South Central States) where the rural practitioner's average income never reaches $4,000, gross. The incomes of urban physicians in the southern sections of the country, however, compare favorably with those of city physicians in the Middle West and in New England. In the Middle Atlantic, the Pacific, and the Mountain States, the average gross incomes of practitioners in communities of less than 5,000 inhabitants are in excess of $7,000 for each state.

On the whole, it may be concluded that, barring the fact that in distinctly rural communities incomes are much lower than in urban centers, there appears to be no pronounced linear correlation between the size of community and the financial returns of physicians.

From the fairly uniform percentages of physicians with net incomes below $2,500 annually, irrespective of the size of community, it would appear that for about 20 to 30 per cent of the physicians other factors than urbanization are of primary importance in determining incomes. Whatever correlation may exist is distorted by more fundamental forces than those usually associated with the concentration of population. The real causes of the wide variation in the economic status of medical practitioners are inherent in the profession itself; they are for the most part engendered by the technical, economic, and social developments of medicine as it is practiced today.

Effect of Specialization.—A conservative estimate of the number of physicians devoting their practice to a specialty is offered by the classification of more than 5,000 physicians who participated in a nation-wide survey conducted by the Committee on the Costs of Medical Care in 1931. Excluding all physicians employed full time on a salary basis, 23 per cent of the physicians in the sample were complete specialists, 21 per cent were partial specialists, and 56 per cent were general practitioners. If this sample is indicative of proportions of physicians of the several types in the country as a whole, it is significant that barely more than one-half the doctors of medicine in the United States are general practitioners, despite the fact that probably between 80 and 90 per cent of human ailments do not require the services of specialists.*

A glance at the income figures in Tables 43 and 44 reveals striking differences in the level of financial returns of partial

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* See Publication No. 22, listed at the end of this volume.

TABLE 43
GROSS AND NET INCOMES OF PHYSICIANS IN PRIVATE PRACTICE BY TYPE OF PRACTICE, 1929(a)

Income	Gross Income				Net Income			
	All Practitioners	General Practitioners	Partial Specialists	Complete Specialists	All Practitioners	General Practitioners	Partial Specialists	Complete Specialists
	Percentage of Physicians							
Less than $ 0	...	...	...	...	6.2	6.9	4.2	3.1
$ 0- 1,000	2.7	4.0	1.0	0.7	8.9	12.6	6.2	3.3
1,000- 2,000	6.5	9.0	5.4	1.4	12.1	16.3	9.9	4.4
2,000- 3,000	7.3	10.7	4.6	1.6	12.0	15.1	10.7	5.1
3,000- 4,000	9.2	11.8	8.1	3.9	10.3	12.7	10.2	6.6
4,000- 5,000	9.5	12.2	8.2	4.3	9.4	10.7	9.6	7.9
5,000- 6,000	7.9	9.4	8.0	4.4	8.3	7.3	8.9	8.5
6,000- 7,000	6,7	7.8	6.3	4.6	6.3	4.8	7.9	7.7
7,000- 8,000	7.6	8.9	6.3	5.5	4.8	3.3	6.4	6.5
8,000- 9,000	5.8	5.2	7.2	6.0	3.7	2.7	5.2	5.7
9,000- 10,000	5.1	4.3	6.2	6.1	3.2	2.0	3.8	4.8
10,000- 11,000	4.1	3.3	4.8	5.3	2.4	1.4	3.0	3.8
11,000- 12,000	3.6	2.3	5.6	5.1	1.9	1.2	2.8	3.4
12,000- 13,000	3.0	2.2	3.6	4.6	1.6	0.8	2.4	3.2
13,000- 14,000	2.4	1.6	3.1	3.5	1.1	0.5	1.3	2.9
14,000- 15,000	2.7	1.6	3.4	4.5	0.6	0.2	1.1	2.2
15,000- 20,000	7.0	3.5	9.4	13.3	2.7	0.8	2.4	6.4
20,000- 25,000	3.1	1.1	3.7	7.6	1.3	0.5	1.4	4.2
25,000- 50,000	4.8	1.1	4.7	13.9	3.1	0.2	2.5	8.9
50,000- 75,000 75,000-100,000	0.9	(b)	0.3	3.3	0.1	...	...	1.2
100,000-200,000	0.1	...	0.1	0.3	(b)	...	0.1	0.1
200,000-300,000	(b)	...	...	0.1	(b)	...	...	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Including physicians holding part-time salaried positions.
(b) Less than 0.1 per cent in this class.

TABLE 44
AVERAGE GROSS AND NET INCOMES OF PHYSICIANS IN PRIVATE PRACTICE, ACCORDING TO DEGREE OF SPECIALIZATION, 1929

Degree of Specialization	Gross Income		Net Income		Ratio of Net to Gross Income	
	Mean	Median	Mean	Median	Mean	Median
All practitioners	$9,461	$7,026	$5,700	$4,100	0.602	0.584
General practitioners	6,421	5,245	3,900	2,900	0.607	0.553
Partial specialists	9,995	8,292	6,100	5,000	0.610	0.603
Complete specialists	16,304	12,239	10,000	7,500	0.613	0.613

specialists, as contrasted with general practitioners, and of complete specialists as contrasted with both other groups. With due allowance for pride in professional ability and absorbing interest in some particular field of medicine, the economic factor must be a strong motivating force to induce physicians to become specialists. Although there are nearly two and one-half times as many general practitioners in this country as there are complete specialists, the latter receive a slightly larger share of the total amount paid for the services of physicians. The average gross income of partial specialists is 55 per cent higher than that of general practitioners, and complete specialists, on the average, receive a gross income which is 63 per cent higher than that of partial specialists and 154 per cent higher than the average for general practitioners. The net incomes vary in much the same proportions, though the disparity between the general practitioners and specialists is slightly greater. The complete specialists had an average net income of $10,000, as compared with $3,900 for all general practitioners.

The median net income of the general practitioners was surpassed by 85 per cent of the complete specialists, whereas only 12 per cent of the general practitioners had incomes in excess of the median for specialists. The maximum net income received by any of 75 per cent of the general practitioners was $5,000; 95 per cent had net incomes below $10,000, and scarcely 1.5 per cent had incomes exceeding $15,000. Among the complete specialists, however, net incomes in excess of $10,000 were obtained by more than 36 per cent of the group and net incomes higher than $15,000 were obtained by nearly 21 per cent.

The correlation of urbanization and specialism is readily seen in an analysis of the incomes of specialists by size of community. The average gross income of specialists in cities of 1,000,000 population and over is nearly $19,000, as compared with the averages of about $14,500 for cities of 25,000 to 100,000 and $12,000 for cities under 25,000. The medians run in more or less the same way. The highest median applies to complete specialists in cities of 1,000,000 inhabitants and over ($13,800). The lowest ($9,550) occurs in communities below 25,000. Nearly 30 per cent of the complete specialists in metropolitan areas have gross incomes of more than $20,000; and about 8 per cent have incomes in excess of $50,000. In communities under 25,000 the proportion of high incomes is not so great, for less than 10 per cent have incomes in excess of $25,000, and less than 1 per cent surpass $50,000. The median gross incomes of physicians according to type of practice and size of community are shown in Fig. 36.

Apparently the moderate-sized community is the most advantageous location for the general practitioner. The incomes of general practitioners in cities above 1,000,000 in population, though higher than in rural communities, are below the incomes in medium-sized cities. In rural communities, the median net income of general practitioners is approximately $2,400. It is followed by the median of $3,300 for cities of more than 1,000,000 inhabitants, whereas the medians for the other cities range between $3,800 and $4,500.

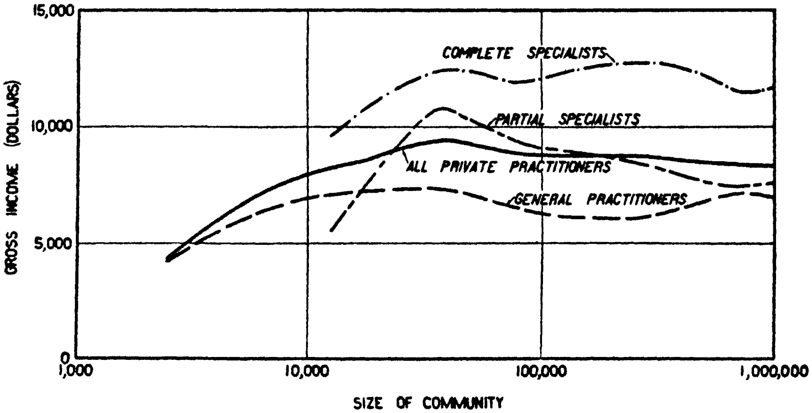

FIG. 36. MEDIAN GROSS INCOMES OF PHYSICIANS IN PRIVATE PRACTICE IN 1929, ACCORDING TO TYPE OF PRACTICE AND SIZE OF COMMUNITY

Even within groups of partial and of complete specialists, variation may be observed in the average incomes derived from the several branches of medical specialism. From the point of view of financial returns, such full-time specialties as anæsthesia, urology, dermatology, and pediatrics would appear to be less profitable than tuberculosis, roentgenology, and orthopedics. Surgery, whether practiced as a partial or a complete specialty, is one of the most remunerative fields of medicine.

Free Care and Collections of Charges.—Patients receive large volumes of medical care for which they make no direct payment to the attending physicians. Medical practitioners and institutions are reimbursed for a part of this free service by appropriations from public funds provided by taxes and other community or philanthropic sources. However, a large fraction of the total free care represents services of private practitioners who receive no direct remuneration from patients or from other sources. Two types of free care rendered by practitioners may be differentiated: (1) " charity " or " courtesy " services for which the physician expects no payment and (2) services which he renders with the expectation of financial return but for which he fails to collect his charges. Both free care and uncollected bills play an important part in the economics of medical practice and have significant bearing upon physicians' incomes as well as upon the costs to patients.

It is impossible to estimate with any degree of accuracy the amount of free care given by the physicians in the United States. In previous reports of the Committee on the Costs of Medical Care, physicians' estimates with respect to their own experience range between 0 and 40 per cent, with the median estimate between 4 and 6 per cent. As a class, physicians normally collect little more than four-fifths of their charges. Even in a year of general prosperity such as 1929, physicians' collections amounted to only 81.5 per cent of the amount charged to patients. In 1929, the complete specialists collected 84 per cent of their total charges, whereas the general practitioners collected less than 80 per cent.*

It is significant that the smaller and poorer the physician's practice, the higher his proportionate losses. Physicians whose total gross incomes amounted to less than $1,000 collected in 1929 only 51 per cent of their charges; those in the income class $1,000 to $2,000 collected 63 per cent. But the physicians with gross incomes between $5,000 and $10,000 collected nearly 80 per cent of their charges and those with incomes of $15,000 and over collected about 85 per cent.

This inverse correlation between the relative losses from non-collections and the size of income is found in each group

* From data supplied by 9,000 surveyed families (see Chapter VII) it appears that about 88 per cent of physicians' charges are paid.

of practitioners. The majority of physicians with incomes above $20,000 are specialists, and the highest rate of collections, about 89 per cent, obtains for the complete specialists who have gross incomes between $20,000 and $30,000.

The practitioners in large cities are more successful in making collections than the physicians in small communities. Those located in towns with less than 5,000 inhabitants collected in 1929 only 78.5 per cent of their charges. In cities of 1,000,000 or more inhabitants, however, physicians' collections in 1929 amounted to almost 86 per cent of their charges. As might be expected, physicians in the more prosperous sections of the country lost least from failure to make collections for their services.

Whereas the volume of medical practice, as measured by total charges, decreased very little from 1929 to 1930 (a year when many millions more people were unemployed than in preceding years, and when the incomes of most wage-earners had already been subject to drastic reductions), the reduction in collections was appreciable, with a drop in the average for all physicians amounting to more than 10 per cent. Since the major portion of physicians' expenses are fixed and cannot be adjusted to fluctuations in gross income, it is reasonable to believe that physicians' expenses in 1930 were as high as in 1929. Consequently, the 10 per cent reduction in collections actually meant an average decrease of 17 per cent in net income.

General practitioners felt the effects of the depression most severely. Their 1930 collections were only 88 per cent of those of the year before and their net incomes were reduced by 20 per cent. The incomes of complete specialists were least affected in the first year of economic stress, for they lost scarcely 8 per cent in collections and hardly 13 per cent in net income. Partial specialists maintained a middle ground between general practitioners and complete specialists. The geographical incidence of the depression in communities below 5,000, so far as physicians are concerned, was not uniform in 1930. Physicians in the cotton-growing areas suffered most. In that year there was a 30 per cent drop in the gross incomes of physicians in Texas, Oklahoma, Arkansas, and Louisiana. The reduction in the net income of these physicians amounted to about 50 per cent. The results of the continued economic recession have not yet been ascertained.

The Adequacy of Physicians' Incomes.—The adequacy of physicians' incomes may be judged internally by assuming an amount below which incomes may be termed inadequate by definition. If a net income of $2,500 be adopted as the dividing line, approximately 33 per cent of the private practitioners, or some 40,000 physicians, had inadequate incomes in 1929. In communities with less than 5,000 inhabitants, one-half of the physicians fell in this class. If the standard of adequate incomes be set at $1,500 per annum, the number of physicians in the United States whose incomes in 1929 fell below even this point was about 22,000, or about 18 per cent of the total number of active private practitioners, urban as well as rural.

In so far as central tendencies are concerned, physicians' incomes compare favorably with the incomes of many other professional groups. The median net income of physicians ($3,827 for all active practitioners in 1929) is slightly higher than the median net income of dentists ($3,781 in 1929); it appears to be higher—normally at least—than the median incomes of clergymen and of college teachers and is perhaps not far below the median income of mechanical engineers. However, it is safe to say that a larger proportion of physicians have inadequate incomes (by any standard) than have members of any other professional group. In this connection, it is well to remember that relatively few professional workers (other than physicians, dentists, and lawyers) assume the financial risks of a privately organized and proprietary enterprise. The incomes of salaried physicians (see p. 244 and Fig. 39) show far greater uniformity than those of private practitioners and compare favorably with those of other professional groups. Among the salaried professions, incomes below $1,000 are very rare indeed; they only occur in the small proportion of those who for one reason or another did not have full employment during the year.

SOME ECONOMIC ASPECTS OF INDIVIDUAL PRACTICE

The independent practice of medicine by an individual practitioner is the characteristic and time-honored method of providing medical care. Several features of private practice may be discussed as the basis for appraising the present and future problems of the independent physician.

The Trend Toward Specialization.—The practice of medicine has followed the developments in other fields of human endeavor, with the division of labor through specialization an outstanding trend. Specialization has resulted from two causes: the increased body of knowledge and demand for technical skill which have compelled individuals to concentrate upon restricted fields of medical science and art; the opportunities for greater financial return in the performance of specialized rather than " general " medical services.

Specialization has taken two forms in the practice of medicine—" vertical " and " horizontal." By " vertical " specialization is meant that type of division of labor by which the physician or dentist assumes responsibility for a group of technical activities by assigning routine tasks to such subordinates as office clerks, laboratory technicians, nurses, orderlies, and X-ray technicians. The physician thus serves as the coordinator of various technical services involved in the care of his patients and limits his professional activities to the special services which only he is equipped to render.

The " horizontal " type of specialization is that which takes place among physicians and dentists of equal training and general qualifications who elect to limit their respective practices to various diseases, to anatomical sections of the body, or to sex or age groups (for example, cancer, gastro-enterology, gynecology, or pediatrics). This type of specialization is, of course, limited to those geographical or population areas in which the number of people and their wealth make it possible for specialists to use their special skill during a relatively large part of their working time.

A tabulation of the proportion of private practitioners in the United States who limit their practice to special services reveals that approximately 23 per cent are so-called complete specialists, and approximately 21 per cent are partial specialists, which leaves scarcely more than one-half to serve as general practitioners. When the distribution is made, however, on the basis of the size of the community, one finds that in towns of 5,000 population or less 86 per cent of the physicians consider themselves general practitioners. In towns from 5,000 to 10,000 population this proportion declines to 65 per cent and it is about 50 per cent for towns from 10,000 to 50,000. In cities with 50,000 or more population less than 40 per cent of the physicians are in general practice. Specialism is urban in the field of medicine as well as in other activities. Where only a small number of people are to be served, as in rural areas, it is necessary for both physician and artisan to render all types of service demanded of them if they are to earn a living.

When data for the larger cities are compared, it is found that the number of specialists represents a larger proportion of the physicians as the size of the community increases. For example, cities of 10,000 or less contain very few pediatricians or dermatologists, and neurology—a recent specialty—is to be found almost exclusively in the larger cities. Comparisons of some of these figures with the findings from community surveys may be of interest at this point. In Philadelphia in 1929, only 35 per cent of the physicians who provided records considered themselves general practitioners; in Detroit 42 per cent were general practitioners; in Shelby County, Indiana, about 90 per cent; in rural areas of San Joaquin County, California, 86 per cent; in the entire state of Vermont, 73 per cent; and in Franklin County, Vermont, 80 per cent; in Orange County, Vermont, 74 per cent; and in the city of Stockton, California, 50 per cent.*

Considerable evidence is at hand to indicate that the desire to specialize is shown by medical practitioners immediately or shortly after their graduation from medical school. If a physician does not restrict his practice to a specialty within ten or fifteen years after he begins to practice, he probably never will do so. This does not mean that most of the specialists in the country have graduated from medical schools within the last ten or fifteen years, but merely indicates that a higher proportion of specialists is found among recent graduates than among the medical profession as a whole. This is to be explained in various ways. In the first place, recent medical graduates have been instructed in the use of scientific apparatus and equipment necessary to the technique of certain specialties and have observed practitioners in these special fields of medicine at work, in the medical schools, out-patient departments, and hospitals. Moreover, recent graduates of medical schools tend to concentrate in the larger cities in which, as has been shown, greater opportunities for specialism exist.

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* See Chapter IX and Publications No. 6, 9, 10, 12, and 18, listed at the end of this volume.

Individual Practice and Individual Financial Relations With Patients.—The private practice of medicine is similar to other economic activities in one respect. In nearly every instance, the physician's service represents a direct professional and financial transaction with an individual patient. But here the analogy ends. Medical service is a distinctly personal product designed for one consumer by one producer. Since the medical needs of no two individuals are absolutely identical and since no two physicians give absolutely identical treatment, the standardization of medical care into units of service is almost impossible except when the service rendered is simple, of a substantially routine nature, or strictly measurable in terms of the number of office visits or home calls required.

Medical care also differs from other retail commodities in that it is not a product to be withheld from those who cannot pay nor to be delivered only to those who have the price. Public welfare demands that all the medical knowledge and skill of the community be available to all its members; and both the general public and the medical profession have insisted, rightly enough to be sure, that the medical profession render service whenever, and by whomever, requested regardless of the patient's ability to pay.

But communities have frequently failed to reimburse physicians directly for the services which are rendered to members of the public unable to pay on their own behalf. Instead, some physicians seek payment for these services indirectly through the assessment of higher fees from patients able to pay them. These physicians have thus dispensed public charity by taxing their well-to-do patients and by passing on the benefits of free service to the poorer members of the community.

The Sliding Scale.—Medical care traditionally has been supported by the public, as have other forms of public service, on the principle that each person should receive in accordance with his needs and each should pay in proportion to his means. This form of taxation doubtless worked to advantage for both practitioners and patients in earlier ages when society was clearly divided into the rich and powerful on the one hand and the poor and dependent on the other. In modern times, however, an adjustable scale of medical charges has long since ceased to be an unmixed blessing to either patients or practitioners. A large proportion of the population of the United States falls not into the class of very rich or very poor, but in a middle range of moderate income. A physician in general practice in this country therefore has few patients so wealthy that they can afford to reimburse him through high fees for the services which he renders to poorer or indigent persons. Moreover, even though much of the service entailed in modern medicine is incapable of price standardization—depending as it does on the skill, knowledge, and experience of the practitioner—certain units of medical care have followed the trend of other commodities and are now relatively fixed in price. The fees for an office call, a house visit, or a night call do not vary greatly in a given locality or among practitioners who serve patients in a given income range. Although fee schedules remain flexible, the direction of their revision is for the most part downward, as when physicians make adjustments in their charges for patients who are unable to pay the customary price of units of service. In so far as general practitioners are concerned, the sliding scale is largely a thing of the past.

Among most specialists, however, and some general practitioners, the sliding scale still functions. No unit charge has been established among private practitioners for tonsillectomies, for appendectomies, or for other operations or services which require special skill in diagnosis and treatment. The bills presented to two consecutive patients for a nearly or apparently identical operation may vary between as wide limits as $25 and $2,500. Such a procedure undoubtedly permits patients of all economic classes to avail themselves of the services of a specialist who might be far beyond their capacity to pay if his maximum or even his average charge were set as a standard and inflexible fee. For the most serious illnesses and for operations which may involve life itself, medical care has no price. The recipient of service is charged in proportion to his wealth and economic importance in the community.* From the practitioner's point of view this procedure is considered justified; the lower fee for the poor patient brings the specialist's service within the patient's means; the higher fee for the rich patient is warranted by the risk involved in, and publicity attached to, attendance upon persons of social prominence. Inasmuch as wealthy patients are more exacting in their demands, physicians feel that they should pay more for the service which they receive. The specialist, then, is the only practitioner who commonly receives financial benefit from the survival of the sliding scale. If specialism is controlled and limited to persons of exceptional ability, the sliding scale may remain the sole device—under the present system of private practice—to place the specialist's services within the range of persons in all financial classes. If specialism continues to expand without control, competition may result in lower and more stable charges.

The majority of physicians probably are adversely affected by the sliding scale. A patient—who may be relatively content to patronize the haberdasher, the grocer, or the automobile manufacturer whose commodities are priced within the range of his income—turns for his medical care to the celebrated specialist who is able to command high fees. The sliding scale is invoked and the well-known specialist makes his special rate. Meanwhile the young practitioner next door—who may be just as competent professionally and only too glad to perform the service at an even lower fee—waits in his office for the patients who pass him by.†

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* Some surgeons have adopted the rule of charging 10 per cent of the patient's income as a fee for a major operation.

† Dr. J. Shelton Horsley, a physician member of the Committee, expresses his disagreement with this analysis of the "sliding scale," as follows:

"The statement that a member of the medical profession charges a larger amount for services to rich patients so that he can give his services to the poor, is misleading.

"First of all, patients who are rich or prominent not only usually demand more services than are actually necessary, but the responsibilities for treating such patients are great. If a very well-known or wealthy patient dies, or is unsuccessfully treated, the reputation of the practitioner suffers much more than if the patient were comparatively unknown. I believe, however, that for certain standard operations, such as for appendicitis and hernia, the variations in charges between a person of average means demanding merely the necessary

Frequently the reputation of a physician is not an accurate measure of his scientific knowledge and skill. Patients purchase what they want rather than what they need, although the wants and needs are sometimes the same. A physician in private practice frequently meets two types of difficulty. In the first place he may find it impossible or very difficult to demonstrate his skill or to earn a living from practice because of his inability to establish confidence in the minds of the people. Very often this inability arises strictly from lack of certain social grace or business personality rather than from professional incapacity to diagnose and treat serious illness.

With rising standards of qualification for medical practice and increasing general knowledge of the fundamentals of good medical care, the mystery and fear associated with medicine will tend to be dissipated, and medical service will be sought primarily from practitioners who possess adequate professional knowledge and skill. To a lesser degree will practitioners through the development of a professional reputation and a fashionable practice be able to command large fees from persons of limited means for the simplest professional services. Under present conditions, in the average experience of young doctors of medicine, seven or eight years must be spent in establishing practice and reputation before the volume of service (as measured by income) is equivalent to the average for all members of the profession. The public and the profession frequently pay a large price for the physician's " reputation."

The higher fee received by specialists has in some instances given rise to a procedure whereby the specialist shares his fee with the practitioner who refers a patient for diagnosis or

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attention and a patient who is quite prominent or wealthy would be nothing like so great as to 'vary between as wide limits as $25 and $2,500,' as stated in the report.

" It seems to be assumed, too, that a member of the medical profession who accumulates any money from the practice of his profession beyond the bare necessities of living does so because of large fees he charges rich patients. Unless we adopted a purely socialistic standpoint that every one should receive the same compensation, this criticism does not appear to be valid. A lawyer, a banker, or an engineer who contributes, for instance, to a community fund, usually does so from money that he has accumulated from the practice of his profession in excess of what is actually required for his living expenses. Why should not the same condition apply to medical men? The doctor no more taxes the rich patients in order to serve the poor without charge, than does the banker, lawyer, or architect tax his rich clients in order to contribute to a community chest fund. Each receives a just return for his services and has a right to dispense what he receives over the amount required for living expenses in such a way as he desires. A doctor has as much right to treat charity cases without making a charge as a banker, lawyer, or engineer has a right to contribute to the help of some worthy cause or worthy individual, and none of these should be adversely criticized because of his contribution either in services or in actual money."

treatment—a practice known as fee-splitting. As a secret transaction, fee-splitting is deserving of wholesale condemnation, whether it takes a financial or a non-pecuniary form. It offers the unwitting patient to the highest bidder, often irrespective of the medical needs of the case or the qualifications of the practitioner. As such, the practice is potentially more harmful than the evil which it may have been designed to remedy. The reference of a patient by one physician to another when the patient's needs render this advantageous must not be impeded. Some device should also be found to equalize the income discrepancies between general practitioners and specialists. But a method other than secret fee-splitting—less degrading to the practitioner and fraught with less danger to the patient—should be found to achieve these two ends.

The Physician's Working Period.—The amount of professional service which a physician may render is measured roughly by the length of time he works. This may be expressed either in terms of the length of his working life, his week, or his day.

In terms of years, most physicians discontinue their practice before they complete thirty-five years of service. An estimate of the distribution of physicians according to their years in practice was made on the basis of 11,766 physicians listed in the 1929 *American Medical Directory,* selected proportionately from cities of various sizes. It appeared that only 9.5 per cent of the physicians had been in practice thirty-five years or more, or, to put it differently, were still in practice thirty-five years after the date of licensure. Since most physicians remain in active practice during their entire lifetime, the duration of their practice is limited solely by their longevity—they die " in harness."

Some interesting comparisons on the locations of physicians of varying years of experience are revealed by the community surveys performed by the Committee. For example, in Shelby County, Indiana, and in Orange County, Vermont, both rural areas, more than one third of all of the physicians reported that they had been in practice thirty-five years or more. In San Joaquin County, California, a prosperous semi-rural and urban county, 10 out of 66 physicians reported that they had been in practice thirty-five years from the date of graduation.

And in Philadelphia approximately one-eighth, or 12.2 per cent, reported this length of experience.* This should not be taken to mean that physicians move to rural areas after they have obtained a certain amount of experience. It indicates (*a*) that if a physician intends to move from a rural area he does so during the prime of life, usually after a maximum of ten or twelve years of rural practice; and (*b*) that there is now a tendency of recent graduates from medical schools to concentrate in the larger cities.

The Committee's surveys in Philadelphia and Detroit revealed some other interesting data on this point. Philadelphia appears to contain more than its proportionate share of the physicians with thirty-five years of practice, a proportion which would not be expected from the general impression that the cities are filled with the younger men. The explanation lies, however, in the fact that Philadelphia and the other eastern metropolitan areas have had at all times more than their aliquot share of physicians. Practitioners do not move away from these large eastern cities. A different proportion obtained in the newer city of Detroit which has not been founded for a long enough period to have a high proportion of " old timers " in the medical profession.

Among the older physicians—those who have been in practice thirty years or more—there are many who completed their training when the standards of medical education were much lower than at present. Many medical schools of thirty years ago admitted students who had merely completed their high-school education. Furthermore, internship or hospital residency was not prerequisite to licensure. The average age of a young physician ready to start his independent practice at the present time is 28 years. The graduate of thirty or more years ago might easily have received all the preliminary training then required when he was 20 years of age. For the modern doctor of medicine, at least six years have been cut from his income-producing period.

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* In the tabulation of the 11,766 physicians made from the 1929 *American Medical Directory*, the years in practice were calculated from the date of licensure rather than from the date of graduation from medical school. In view of the fact that usually a year of internship or apprenticeship elapses between graduation and licensure, it is to be expected that the data revealed in the individual community studies made by the Committee on the Costs of Medical Care would show slightly longer periods of practice for the physicians.

For many physicians it is almost impossible to budget time for any appreciable distance ahead. A doctor may work for eighteen hours in one day and then be almost completely unoccupied for a twenty-four-hour period. During the week he may be engaged in professional service (at the office, in a patient's home, in the hospital, or in the laboratory) for approximately 48 or 60 hours. Physicians in smaller cities in calculating their time " on duty " have estimated that their average working week is from 56 to 70 hours, including Sundays.

It is probable that during the first five years of practice a young physician is professionally occupied only about one-half the time which physicians on the average devote to their practice. The economic waste which idle time represents is difficult to calculate. But—when consideration is given to the fact that about 22,000 physicians have been graduated in the last five years, or more than one-sixth of all the physicians in private practice—the enforced idleness of young practitioners may have an important relation to the costs of physicians' services. Surely something is amiss in an economic scheme which fails to utilize to the maximum the potentialities for service which are now wasted while a young physician awaits the privilege of earning a livelihood.

Capital Investment in Medical Practice.—In a recent study of the expenses incurred by medical students during their course of training, Dr. R. G. Leland * has estimated that the average expenditures per student amount to more than $1,000 a year. In addition, the capital investment per student made by the public in medical schools has been calculated as approximately $4,000 per student.† Irrespective of the source of funds which provide the opportunities for medical education and research in hospitals and medical schools, the outlay made by the individual practitioner for his professional training represents a relatively small amount when expressed as an interest charge on his initial capital investment.

The physician's overhead costs of maintaining a private practice vary greatly from one office to another. One physician may conduct an independent practice in a single room or at most with a waiting room and an adjoining examining room. Another doctor—to make it possible for his patients to be prepared simultaneously for his counsel, examination, or treatment—may maintain a suite of offices with several examining rooms, a telephone clerk and admission girl in the waiting room, a laboratory technician, and a roentgenologist in separate quarters, and several nurses and possibly an attendant to assist him in the conduct of minor operations. The physician's capital investment in private practice, therefore, in so far as it takes the form of permanent apparatus and equipment may range from a few hundred dollars to cover the cost of a few instruments, to $5,000 or $10,000 for elaborate diagnostic and therapeutic apparatus.* It has been estimated that physicians and dentists combined have invested $600,000,000 in the equipment and apparatus of their private offices.†

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* " The Costs of Medical Education," *Journal of the American Medical Association*, February 28, 1931, Vol. 96, p. 682.

† Unpublished data from an article prepared by Julian S. Duncan, Ph. D.

All physicians who are permitted to care for patients in hospitals have also the privilege of using the scientific apparatus and equipment of the hospital, without direct reimbursement to the institution. Usually no separate charge is made to the physician in view of the fact that the invested capital is provided by the general public for the use of the community as a whole, usually without the expectation of earnings or repayment. Ordinarily no charge is made to patients for the use of the capital investment in hospitals; consequently physicians are not expected to reimburse the hospital unless they actually use the facilities of the hospital for the treatment of their private ambulatory cases.‡

The majority of physicians are entitled to hospital privileges in some institutions in their community. In 1929, about 85,000 of the 121,000 physicians in private practice were permitted to treat bed patients in one or more of their local hospitals. Hospital staffs, to be sure, limit the extent and types of practice for which the physician may use the institution; this limitation is ordinarily imposed by the regulations of the hospital and its professional advisers.

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* See Chapter XXV for a description of the methods whereby physicians in private practice form groups to distribute overhead costs.

† *Cf. The Crisis in Hospital Finance,* by Michael M. Davis and C. Rufus Rorem (University of Chicago Press, 1932), Chapter VII.

‡ See Chapter XXIV, for an account of the increasing tendency of physicians to establish private offices in hospitals.

THE ESTIMATED NEED FOR PHYSICIANS' SERVICES

In a recent report of the Committee * which outlines the amount of medical care required by the people of the United States if their physical and mental defects and disorders are to receive preventive, diagnostic, and therapeutic treatment consistent with present-day standards of adequacy, it is estimated that a total of 283,131 physician-hours would be required per 100,000 of the population. On this basis, 173,848 physicians would be necessary, evenly distributed throughout the 1929 population of this country. If each of these physicians were to receive the present average gross income of all physicians, about $1,564,632,000 would be spent for physicians' services —$12.75 per capita, or nearly 44 per cent more than the amount now spent. Whether or not the population of the country can afford, under present economic conditions, to spend this amount for the services of private practitioners, is another question.†

It is perhaps of interest to speculate upon the effect which a proper allocation of medical care to general practitioners and specialists would have upon the total costs of physicians' services. Table 45 indicates the present distribution of numbers of general practitioners and specialists in the United States and their gross incomes as contrasted with the estimated numbers of each type of practitioner necessary to provide "adequate" medical care, and the amount which their services would represent at the same average incomes now received.

From the data in the table certain significant deductions are possible. Although the total number of physicians would need to be increased by about 44 per cent if the people were to receive adequate medical care (assuming physicians will have that hypothetical competency which is specified in the standards of good medical care), the present supply of general practitioners would need to be increased to a little more than twice

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* See Publication No. 22, listed at the end of this volume.

† The following amounts represent per-capita costs of physicians' services (exclusive of services in institutions for the insane and the tuberculous) in organized medical services:

Endicott Johnson	$5.69	(Publication No. 5)
Homestake	5.39	(Publication No. 18)
Roanoke Rapids	6.76	(Publication No. 20)
Fort Benning	10.37	(Publication No. 21)

TABLE 45

A COMPARISON OF THE NUMBER AND TYPES OF PHYSICIANS AND EXPENDITURES FOR THEIR SERVICES IN 1929 WITH THOSE REQUIRED FOR ADEQUATE MEDICAL CARE

Type of Practitioner	Estimates for 1929					Estimates of "Adequacy"(a)			
	Number of Physicians	Per Cent of Total Number	Average Gross Income	Total Expenditure	Per Cent of Total Gross Income	Number of Physicians	Per Cent of Total Number	Total Expenditure(b)	Per Cent of Total Expenditure
General practitioners	67,760	56	$6,110(c)	$414,000,000	38	142,166	82	$868,600,000	68
Partial and complete specialists	53,240	44	12,700(c)	676,000,000	62	31,682	18	402,400,000	32
Total	121,000(d)	100	$9,000	$1,090,000,000	100	173,848(e)	100	$1,271,000,000	100

(a) The numbers of physicians and their division between general practitioners and specialists deduced from estimates of adequate medical care. For details, consult Publication No. 22, listed at the end of this volume.

(b) Assuming the same average gross incomes as were earned in 1929.

(c) These averages are slightly different from those presented (or implied) in Table 44, because various factors by which the data of Table 44 have been weighted are ignored here to retain simplicity and internal consistency in this table.

(d) Exclusive of full-time, salaried physicians.

(e) Exclusive of staff physicians in hospitals, sanatoria, and health departments.

the present number in private practice. The present supply of specialists, however, could be reduced by 40 per cent, and still comply with standards of adequacy far in excess of present demand for complete medical care. If appropriately competent general practitioners and specialists were available in adequate numbers and in correct proportion to meet the potential demand for adequate medical care, and if each type were to receive the same average gross income as at present, the total medical bill for physicians' services would be approximately $1,300,000,000, or little more than $10 per capita. Considered in another way, if the public were to pay physicians an average of $12.75 per capita, and the specialists were to obtain only 32 per cent of this amount (instead of the 62 per cent which they now receive), the average gross income of general practitioners would be increased from $6,110 to $7,837, an increment of 28 per cent, which on the basis of the present ratio of net to gross income would represent an average net return of $4,992 in contrast with the $3,900 now received.

CHAPTER XII

DENTISTS: THE PRIVATE PRACTICE OF DENTISTRY

It was not until as recently as 1839 that a scientific foundation for dentistry was established. Previous to that time, teeth were extracted and caries imperfectly arrested by barbers. The empirical practice of dentistry, which was almost wholly mechanical, was in the hands of dental artisans who, although they lacked medical education, in many cases possessed technical skill which, for the time, was of high degree. With the recognition of the relationship between diseases of the teeth and general pathologic conditions, two classes of practitioners were established—those who regarded dentistry as a specialty of medicine, and those who considered it a distinct and separate calling.

Until well into the nineteenth century dentistry was learned by the apprentice method, but the more liberal minded and better educated of the craft evidenced an increasing opposition to the profits, secrecy, and quackery fostered by the apprentice system. The American Society of Dental Surgeons was founded in 1840 "to advance the science." The years 1839 and 1840 mark the birth of professional dentistry.[†]

Dentistry is thus a comparatively new branch of medicine and because of its relative youth, it is freer from the traditions and sentiments which so complicate the practice of physicians. Moreover, dental care is rarely a matter of life and death. Expenditures for dentistry are largely elective, and the costs of dental service are easier to predict and budget than are the costs of illness. For these and other reasons, the economic problems associated with the practice and purchase of dental care differ from those in other branches of medicine. When the public is educated to demand adequate dental treatment, and when the correlation between sound teeth and general health is more generally known, the urgent necessity for dentis-

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[*] Much of the material in this chapter is taken from *The Practice of Dentistry and the Incomes of Dentists in Twenty States: 1929*, by Maurice Leven (University of Chicago Press, 1932), and from Appendix B of Publication 24, listed at the end of this volume.

[†] For a detailed history of dentistry and an analysis of the status of dental education, see *Dental Education in the United States and Canada*, by William J. Gies (The Carnegie Foundation for the Advancement of Teaching, New York, 1926). The brief historical outline above is from the *Encyclopædia Britannica.*

try may introduce many problems similar to those entailed by serious systemic illness. Families of low economic level now go without dental care if they cannot afford it. From the standpoint of their general health and efficiency, this neglect of preventive, therapeutic, and restorative dentistry represents tremendous economic waste. To the student of the economic aspects of medical care, the present lack of dental treatment and the postponement of dental care because of insufficient funds are even more significant social phenomena than the burden of the costs of dentistry.

THE NUMBER OF DENTISTS

Dental care, like care from physicians, is largely rendered in the United States by independent private practitioners who maintain individual financial relationships with their patients.

In number and economic importance among the primary medical practitioners in the United States, the dentist ranks second only to the physician. It is estimated that at the close of 1929 approximately 62,400 licensed dentists were in active practice. Of these, 56,800 were independent private practitioners and 5,600 were employed on a full-time salary basis by other practitioners or by medical organizations. The dentists who hold full-time salaried positions outside the offices of private practitioners are considered in Chapter XIII.

THE DISTRIBUTION OF DENTISTS

In many parts of the country the ratio of dentists to the population shows a slight increase when data for 1925 are compared with 1928. The increase is in sharp contrast to the relative decrease in number of physicians and is evidence of the fact that the need for dentistry is becoming increasingly apparent to the people of the country. It is interesting to observe from Appendix Table 9-A that most of the New England States, as well as those in the Middle Atlantic regions, showed slight decrease in the ratio of dentists per 100,000 population between the years 1925 and 1928. This was also true in some of the mountainous and sparsely populated regions of the country. In the Central States, however, and in those which have not rapidly increased in general population, the ratio of dentists to the members of the general public has increased.

The ratio of dentists to the population as of 1928 * varied widely in different states, with an average of about 1 dentist to every 1,700 persons. In a few states, particularly those in the South, the ratio is 1 dentist to every 4,000 persons. It is estimated that among the negroes there was in 1928 1 colored dentist for every 8,500 persons.

A definite concentration of dentists is found in the urban areas of the country and in the larger cities. Many small villages which support a physician, or even two physicians, contain no dentist. Whereas there is a much smaller proportion of dentists to population in towns of 5,000 or less and the rural areas, the concentration of dentists in the metropolitan centers of 100,000 population is even more noticeable than in the case of physicians. The percentage distribution of general practitioners of medicine and of dentistry by size of community is shown in Table 46.

TABLE 46

DISTRIBUTION OF MEDICAL AND DENTAL PRIVATE PRACTITIONERS BY SIZE OF COMMUNITY, 1929

Size of Community	Physicians	Dentists
Under 5,000	30.6	21.6
5,000– 10,000	6.5	6.9
10,000– 25,000	7.3	9.9
25,000– 100,000	11.8	13.3
100,000–1,000,000	25.9	29.2
1,000,000 and over	17.9	19.1
Total	100.0	100.0

DENTAL EDUCATION

In 1928, 37 Class A and Class B dental schools were in existence in the United States.† These institutions had a total enrollment of 8,956 in 1928, including 105 women. The proportion of women in the field of dentistry is even lower than the proportion of women students in medical schools and in the practice of medicine.

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* Leaflet No. 7, United States Department of the Interior, Office of Education.

† A Class A dental school is one which fully meets the requirements of the Dental Education Council of America, and a Class B institution is one which probably will be able to meet these requirements within a reasonable time.

Five years of training is the minimum requirement for graduation effective in 27 dental schools. These five years usually consist of one pre-dental year following high school and a four-year professional course. In some instances, however, two years of pre-dental work are required, with either three or four years of dental school. The degrees awarded are Doctor of Dental Surgery or Doctor of Dental Medicine. For work done beyond these degrees, Master of Science, Doctor of Science, and Doctor of Philosophy are awarded. The degree of Doctor of Dental Surgery or its equivalent is held by 99 per cent of the dentists now in practice; some of those who have no dental degree are doctors of medicine or registered pharmacists.

According to a survey of the American Dental Association,* most of the dentists practicing at the present time (96 per cent) appear to have had at least three years of training in a dental school, and about 38 per cent had received formal training of four years or more. Of those who spent a maximum of only two years in dental school, the majority were graduated prior to 1895. A large proportion of the dentists surveyed had supplemented their undergraduate work by postgraduate and study-club courses.

The average length of time since graduation from dental school for all dentists was, in 1929, slightly less than sixteen years. The average length of practice in their respective communities was fourteen years, indicating that dentists tend to establish a permanent practice within one or two years following graduation from dental school. As many as 70 per cent of all dentists have practiced their profession exclusively in the communities in which they worked in 1929.

REQUIREMENTS FOR LICENSURE

Statutory requirements in all states now provide that dentists applying for license must (1) show graduation from an approved dental school, (2) pass a licensing examination, and (3) register annually with some state officer. Before a dental graduate becomes a practitioner he must pass a formal examination before a state board of dental examiners, covering both the theoretical and the practical phases of his profession. The examinations vary in scope and difficulty in the various states and the proportion of candidates who fail is influenced to considerable extent by the prerequisites for eligibility to take the examinations. For individual schools, the percentage of failures in examinations ranges annually from 0 to as high as 63 per cent. The average for the year 1928 in all states was 7.7 per cent; during the period from 1910 to 1928, an average of 12.2 per cent of the candidates for licensure failed to pass their examinations.

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* *The Practice of Dentistry and the Incomes of Dentists in Twenty States: 1929,* by Maurice Leven (University of Chicago Press, 1932).

SPECIALIZATION

Since dentistry is itself a medical specialty, specialism within its own field is not so common as in the practice of physicians. However, data obtained by the Committee on the Study of Dental Practice of the American Dental Association indicate that in 1929 approximately 89 per cent of all dentists in private practice considered themselves general practitioners, 8 per cent were partial specialists, and 3 per cent were complete specialists in some particular phase of dentistry such as orthodontia (the correction of irregularities of occlusion of the teeth), oral surgery (operative dentistry and extractions), periodontia (treatment of diseased conditions of the regions adjacent to the teeth). Most of the dental specialists are located in large cities.

Only about 32 per cent of the general practitioners practice orthodontia and about 89 per cent treat pyorrhoea. More than 95 per cent of the general practitioners perform extractions. As a group, the specialists have changed their place of practice more frequently than have the general practitioners. Complete specialism is in a large measure confined to dentists who practice among well-to-do classes, and the same restriction applies in a lesser degree to partial specialists.

CONDITIONS OF PRACTICE

Approximately one-half of the independent dental practitioners employ one or more assistants or attendants. In the modern dental office, subordinate technical services have been so organized that many procedures may be carried on by subsidiary personnel engaged on a part-time or a full-time basis. Dental technicians, for example, prepare materials; and dental hygienists—who are licensed to perform certain limited professional services for the patient under supervision of a licensed dentist—are trained to scale and clean teeth. At least twenty-five states now have laws licensing dental hygienists, and courses for hygienists are offered at eleven Class A dental schools. It was estimated from figures of the Dental Hygienists' Association of America that, in 1929, approximately 1,800 hygienists were employed by licensed dentists.

In contrast to the physician—who is normally available to his patients at any hour of the day or night—the dentist ordinarily maintains an office practice carried on at stated hours of the day and on stated days of the week. Only infrequently is a dentist's office routine interrupted to care for emergency work. To be sure, aches and extreme pains may require a visit to the dentist's office before or after his regular hours. But the ultimate treatment of the disease or condition usually can be scheduled at a time convenient to both patient and practitioner.

On the average, the dentist practices between 47 and 48 weeks per year. A normal week consists of 30 hours at the chair, 6 hours in the laboratory, and 10 hours devoted to other office procedures. Complete specialists usually work fewer hours than the general practitioners in dentistry. Very little difference occurs in the length of the working year or week in various geographical sections or in communities of various size. In 1929 each dentist treated on the average 8 patients per day and came in contact with about 430 different patients during the year.

CAPITAL INVESTMENT

A study of student expenses during their dental-school training, conducted by the Committee on the Study of Dental Practice of the American Dental Association, indicates that the student budget per year is about $1,000, of which $465 consists of strictly professional expenses for tuition, laboratory fees, and books. The average amount spent per student by the institution is estimated as approximately $617. When the amount paid by the student ($293) is deducted, it is apparent that the public, through taxes or endowments, contributes $324 per student per year.* The investment in a dental education bears the same relation to dental income as investment in a medical education bears to medical income, namely, it is a very indirect and a minor influence on the practitioner's earnings.

A recent report published by the Committee on the Study of Dental Practice of the American Dental Association gives estimates of the cost of equipping dental offices.† It was found in a survey of graduates of dental schools in 1930 that the average expenditure was $2,867. Of this amount 80.7 per cent was spent for operating room and laboratory equipment, 6.5 per cent for dental supplies, 5.7 per cent for plumbing and wiring, 4.8 per cent for furnishing waiting rooms, and 2.3 per cent for miscellaneous items. If 6 per cent is allowed annually as interest on this initial capital investment, and if 10 per cent of the original cost is allowed for repairs and replacement of worn-out or obsolete equipment, interest and depreciation amount to $440 per year per dentist.

As in the practice of physicians, private practitioners of dentistry in some instances form groups to share overhead expenses through the joint utilization of office space and equipment. In such a group each practitioner, however, maintains independent professional and financial relationships with his patients.

A few private dental clinics have also been established—similar in organization to those of physicians (see Chapter XXV). In such instances, a coordination of dental service involves the grouping of dental specialists around a nucleus of dental practitioners who carry on a general practice. The private dental clinic typically is owned and conducted by one practitioner, the demands for whose time have exceeded his capacity to take care of patients individually. The growth usually first takes the form of the appointment of a dental technician and hygienist; later various types of general practice are placed in the hands of employed assistant licensed dentists, with the owner of the clinic confining himself to some specialty such as prosthetic work, or extractions, or orthodontia. As the volume of work increases, other dentist members of the group may also be instructed to limit their practice to particular specialties, and the simpler conditions are treated by the newer and less-experienced assistants. As a rule, the dental clinic has been developed in the United States by training young dentists through association with a number of well-known practitioners. These clinics are usually established in the larger metropolitan areas. For example, in Washington, D. C., a group of five dentists restricts its services almost exclusively to extractions, and in the city of Chicago a similar group carries on a general practice in which the owner performs the prosthetic work and the other licensed dentists in his employ specialize partially in extractions, X-ray diagnosis, and prophylaxis.

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* Preliminary draft of *A Study of the Cost of Dental Education*, by Miriam Simons Leuck, Committee on the Study of Dental Practice of the American Dental Association.

† *The Cost of Equipping a Dental Office*, by Dorothy Fahs Beck (University of Chicago Press, 1932).

THE COSTS OF DENTISTRY AND THE DISTRIBUTION OF DENTAL INCOMES

The total gross income of the 56,800 dentists in private practice in 1929 is estimated as about $445,500,000, or nearly 13 per cent of the total bill for medical care in the United States. The total amount received by dentists represents an average gross income of about $7,840 per dentist. On this basis, payments for dental care amounted to almost $3.90 per capita for each individual in the country three years of age and over. An estimate of the total number of persons who received dental care during the year is placed at 24,400,000, or less than 22 per cent of the total population. This means that on the average each dental patient paid $18 for the dental service which he received.*

Gross Versus Net Income.—The gross income of dentists is of interest to the patients and the public at large, for it represents the actual expenditure for dental care. From the point of view of the practitioner, however, gross income has less significance. From the amounts collected from patients, dentists must pay the expenses of their practice which consist of the costs of supplies and precious metals, laboratory work done outside, and the various other items such as salaries to assistants, rent of offices, and light, heat, and electricity. After these expenses are paid, an amount which represents net income remains to the practitioner as actual return for his services.

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* This calculation of the average expenditure per dental patient ($18) agrees very closely with the recorded average charge per dental case ($18.59) in the experience of 9,000 surveyed families (see Table 24).

On the average, the ratio of net to gross income in the practice of dentistry is 0.593. In other words, of every $1,000 which the dentist receives in fees, $593 is retained as net income and $407 is used to defray the costs of maintaining his practice.

The average net income of dentists in private practice is approximately $4,653 a year. An average, however, gives a very inadequate picture of the experiences of individuals. The gross and net incomes of dentists are found to vary within wide limits, depending upon many economic factors such as years of experience, years spent in a given community, the size of the community and the geographical section of the country in which it is located, the extent to which practice is restricted through specialization, the number of hours of work, the employment of salaried assistants, and the number of patients treated per day. To provide an understanding of the relative importance of these several factors, the influence of each will be discussed briefly in turn.

Variation of Income With Years of Experience.—A question of major interest in the study of incomes of any group is the influence of age and experience upon earning power. It appears that the height of the dentist's career, from the standpoint of net income, is reached at about the thirteenth year after graduation when his net income is slightly more than $5,000. After five to nine years of experience in his profession the average net income of a young dentist is approximately equal to the mean and median for all dentists. (See Fig. 37.) This same level is again reached in about the thirtieth year of practice after the incomes have started to decline. Even in the first year of practice, dentists—in contrast to physicians (see p. 202)—earn slightly more than their expenses of practice.

The greatest change in the income of dentists comes within the first five years of their practice. Among the general practitioners covered in a nation-wide survey,* the average net income in the first year of practice was about $850; in the third year, about $3,000; and in the fifth year, about $3,800. The average for the first 5 years of practice of the same dentists (the graduates of 1925 to 1929) amounted to approximately $3,000. For those who were graduated during the years 1920 to 1924 the average net income was slightly more than $4,700, and for those who were graduated in the preceding five years the average amounted to about $5,800. This is the highest average amount for any five-year period. The averages for

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* See *The Practice of Dentistry and the Incomes of Dentists in Twenty States: 1929*, by Maurice Leven (University of Chicago Press, 1932).

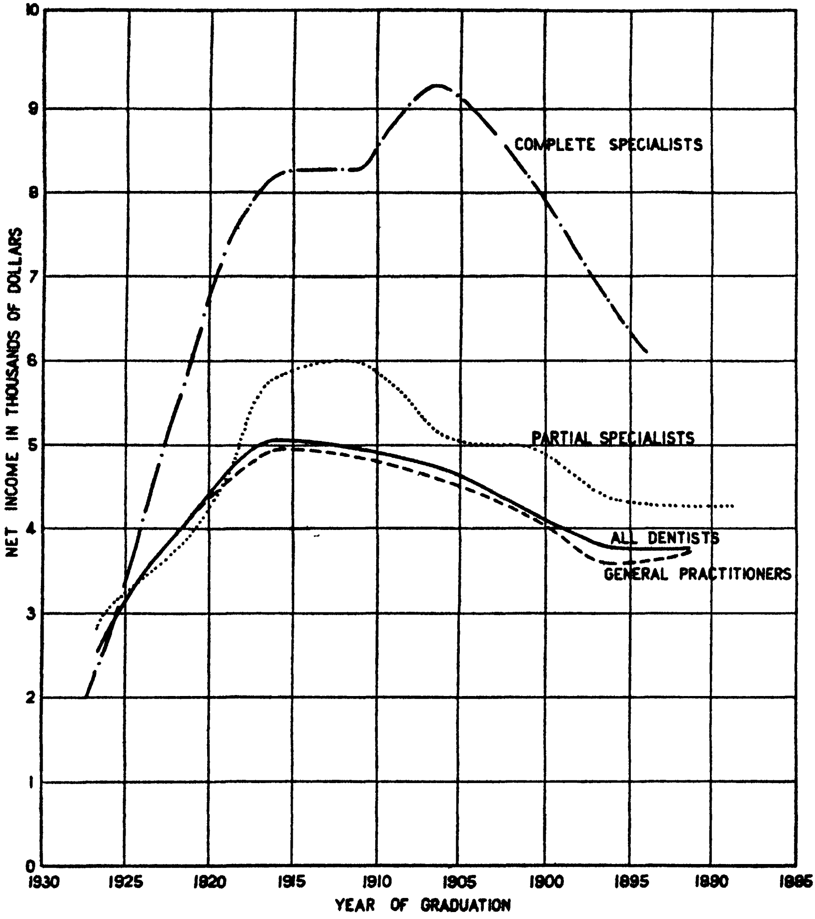

FIG. 37. MEDIAN NET INCOMES OF DENTISTS IN 1929, ACCORDING TO YEARS OF EXPERIENCE SINCE DATE OF GRADUATION

the five-year graduation periods prior to 1915 show the decline in incomes as the dentists grow older.

The Effect of Size of the Community.—Even among dentists who graduated in the same year, and who have presumably had the same number of years of experience, significant variations in gross and net income are found. One important factor in this variation appears to be the size of the community in which the practitioner is established. As for physicians, a certain minimum per-capita wealth (and consequent urbanization) is necessary to support a practitioner, hence one would expect to find that dentists in more sparsely settled rural areas where per-capita wealth is low would receive relatively low incomes. The average gross income of dentists in cities with a population of 1,000,000 or over is practically twice as great as that of the dentists practicing in rural areas and communities of less than 5,000 inhabitants.

Although the gross income of general practitioners in rural areas is about 35 per cent less than the average for all general practitioners, the net income of the rural dentist is only slightly more than 29 per cent below the average. In the largest population groups, the general practitioner receives nearly 30 per cent more than the average for all general practitioners in all communities, but his net income is only 22 per cent above the corresponding average for all dentists in general practice.

The net incomes do not show the same wide variation between the extremes of population groups, for the expenses of practice incurred by dentists in the larger communities are higher both absolutely and relatively than in smaller communities. Whereas, for all dental general practitioners, the average ratio of net to gross income is 0.596, dentists established in the smallest population groups (under 5,000) retain over 64 per cent of their gross returns, and dentists in the largest cities retain less than 57 per cent. In general, net incomes increase with increasing size of community, and, with the exception of dentists in cities of 100,000 to 1,000,000 inhabitants, professional expenses also increase with increasing urbanization.

Fig. 38 indicates the composite effect of years of experience and size of community upon the dentist's income. In practically every population group the median net incomes follow a convex curve which roughly describes the rise and fall of earning power with increasing years of practice. The peak net income for rural practitioners is reached at about the fifteenth year of practice, whereas, for all dentists and for those in the largest communities the maximum income is obtained with five years less experience.

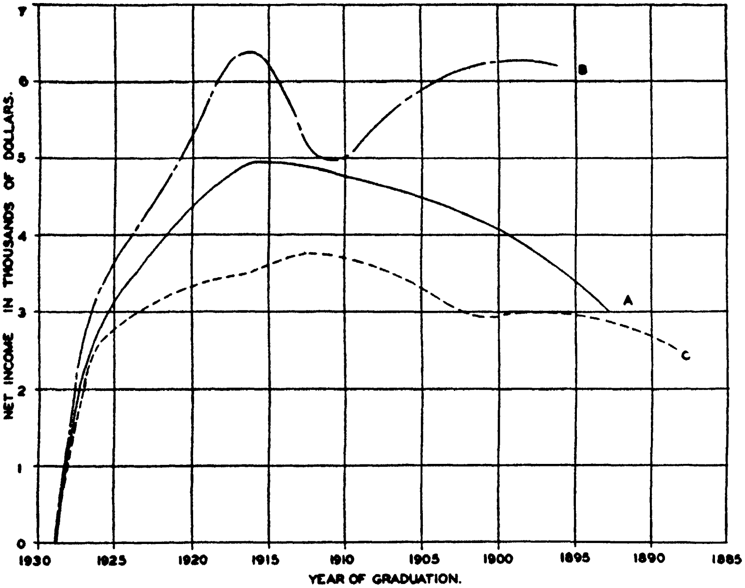

FIG. 38. EFFECT OF YEARS OF EXPERIENCE SINCE DATE OF GRADUATION AND SIZE OF COMMUNITY ON THE MEDIAN NET INCOMES OF DENTISTS IN GENERAL PRACTICE IN 1929

A, All population groups; B, cities of 1,000,000 population and over; C, towns of less than 5,000 population.

The Influence of Geographical Location.—Although not so important as size of community, geographical factors have considerable effect upon the incomes of dentists. On the whole, dental incomes are lowest in the South and highest in the North Central, the Middle Atlantic, and the Pacific States where the presence of very large cities introduces the added factor of urbanization. In the South, very high incomes are infrequent, and the average gross incomes range from a minimum of $4,511 to a maximum of $8,707. In the Middle Atlantic States the incomes are least uniform: very low incomes are coexistent with very high incomes, even in communities of the same size. Professional expenses are highest in the Middle Atlantic States (ratio of net to gross, 58.9 per cent) and lowest in northern New England where, on the average, dentists expend no more than a third of their gross receipts to meet the expenses of practice.

The Influence of Specialization.—For all private dental practitioners in all types of communities the following average gross and net incomes have been estimated:

	Gross Income	Net Income
General practitioners	$7,400	$4,400
Partial specialists	9,900	5,700
Complete specialists	14,300	8,400

The complete specialists receive, on the average, 44 per cent more gross income than the partial specialists, and 93 per cent more than the general practitioners. The total number of complete specialists in dentistry in the United States is estimated as 1,700, or only about 3 per cent of the total number of dentists in private practice. In all, about $24,950,900 is paid for the services of these complete specialists, and their aggregate gross income amounts to approximately 5 per cent of the total paid to all dentists in private practice. This is in distinct contrast to the division of gross payments for medical care among physicians, where the specialists (representing 44 per cent of the total number of practitioners) receive 62 per cent of the total gross expenditures for physicians' services.

Partial specialists in dentistry are more numerous than practitioners who wholly limit their practice to a given field. The 4,500 partial specialists in the United States represent about 8 per cent of the total number of dental practitioners, and receive in gross income over 10 per cent of the total amount spent for dental care.

Incomes of dentists classified by type of practice also vary significantly with years of experience. As might be expected, the curve in Fig. 37 which represents the median net incomes of all dentists closely approximates that of general practitioners, since the latter group represents 89 per cent of the former. General practitioners reach their maximum incomes in about the thirteenth year of practice—the average for all dentists. The net incomes of partial specialists continue to ascend until about the eighteenth year, and complete specialists reach their peak of earning power in about the twenty-third year after graduation.

The correlation of income and size of community considered in conjunction with degree of specialization is not susceptible of detailed analysis. Partial and complete specialists are almost exclusively located in large cities.

Hours of Work per Week.—In a profession rendering a service the volume of which depends chiefly upon personal attention extending over a period of time, the volume of charges and of net income should logically also vary with the total time given to practice. However, this can be true only when time spent in practice approaches the time of actual (productive) work. If most of the time of the dentist is spent in waiting for patients, his income will obviously be low, irrespective of the number of weeks or hours he spends at the office. The proper balance between time spent and actual time worked is reached only by the more successful.

Average Number of Patients per Day and Average Charges.—The average number of patients treated per day provides a good index of dental income. For general practitioners, each patient-per-day during the year means an annual net income of approximately $700. The " average " dentist treats between eight and nine patients a day, and the " median " dentist about eight. For general practitioners, two patients a day or less result in a mean net income of about $1,400; eleven or more, a net income of $7,000. The median charges per hour maintained by dentists vary from $5 to $8, according to size of community. The median for all communities is $6.

Variation With Employment of Salaried Personnel.—Generally speaking, high incomes are associated with the employment of salaried personnel. The general practitioners who employ assistant dentists have incomes averaging about $8,000, as compared to $4,600 for the majority who do not employ such assistants. Likewise, the average income of those who utilize oral hygienists and technicians is higher than the average for those who do not employ these types of personnel; in a like manner, the average net income of the 45 per cent of the general practitioners who employ dental assistants, secretaries, or nurses is more than 71 per cent higher than the average for dentists working entirely by themselves. The last difference is, of course, in a large measure a reflection of the influence of the size of city, and the number of patients, for the dentists who do not employ a dental assistant or nurse are to be found chiefly in the smaller communities.

Size of community affects the income of dentists working single-handed as well as of those employing personnel; the large city offers the dentist working by himself a comparatively smaller advantage in average net income than it affords those making use of salaried personnel.

Specialists, as a class, employ proportionately more personnel than do dentists in general practice. The average incomes of the specialists and general practitioners are brought closer together when the dentists who employ no salaried personnel are eliminated from the calculations. When all dentists are included, the average net income of complete specialists is 80 per cent higher than the average for general practitioners; but when the comparison is limited to those who employ salaried personnel, the average for complete specialists is only 55 per cent higher than that for general practitioners. Furthermore, among the dentists who have no salaried personnel whatever, the difference between the average incomes of complete specialists and general practitioners is only 4 per cent.

Some members of the dental profession believe that a far larger proportion of the service performed by dentists should be placed in the hands of technical assistants under the direction of a dentist who is also a doctor of medicine. Such an arrangement would doubtless give the best possible correlation of dentistry and dental treatment with other phases of medical care and, for dental clinics and metropolitan areas, the suggestion offers possibilities of lower costs and higher grades of service. As a practical matter, however, it seems doubtful that smaller communities which are now able to support only one or two dentists who perform all types of dental service could demand the full-time services of a medico-dental practitioner with several subordinates.

Here as elsewhere the ideal must be compromised with the practical. However unsatisfactory the service now being received from many dentists may be, it is on the whole far better than no service. To raise the qualifications of dentists to a point commensurate with the highest ideals of educational and technical standards at the price of making dentists financially unavailable would be little short of foolhardy. With increasing transportation facilities, a county center for dental service may, however, be a practical solution of this problem for many groups in the population.

THE ESTIMATED NEED FOR DENTAL SERVICES

The amount of dental care required by the people of the United States, when calculated in terms of personnel necessary to supply the service, depends greatly upon the manner in which the practice of dentistry is organized.* If dentists perform all their own laboratory work, X-ray photography, and scaling and cleaning, some 219,444 would be needed, divided as follows:

	Number Required	
	Per 100,000 Persons	For United States
General practitioners	157.9	193,901
Exodontists	15.1	18,543
Orthodontists	5.7	7,000
Total	178.7	219,444

If dentists were to confine their services to only chair work requiring professional services,† and were to employ X-ray *and laboratory technicians and hygienists for the performance* of all strictly routine and mechanical tasks, the number of dentists required for the population as a whole could be reduced to 121,081 practitioners, divided as follows:

	Number Required	
	Per 100,000 Persons	For United States
Dentists:		
General practitioners	86.7	106,468
Exodontists	7.6	9,333
Orthodontists	4.3	5,280
Total	98.6	121,081
Subsidiary personnel:		
X-ray technicians	26.7	32,788
Hygienists	*44.7*	*54,892*
Laboratory technicians	18.1	*22,227*
Total	89.5	109,907

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* See Publication No. 22, listed at the end of this volume.

† "Chair work" may include many routine services which might be performed by technical under the direction of licensed dentists.

For the provision of the amount of dental service estimated as adequate to the needs of the population as a whole, a much larger number of dentists than now available would be needed. The number of dentists who might be kept fully occupied if the residents of the United States were educated to demand and were able to pay for complete preventive, therapeutic, and reparative dentistry would be between 99 and 179 dentists per 100,000 persons, depending upon the use of subsidiary personnel. Only two states—California and Oregon—had in 1928 more than 99 dentists per 100,000 population.

This enormous discrepancy between the existing supply of dentists and the estimated number required to provide adequate care suggests that the problems of providing adequate dental care are largely those of reducing costs and of educating people to the need. It would seem desirable to economize the time of the highly-trained dentist by the delegation of as much of the routine work to less expensive personnel as is compatible with the provision of good dental care.

The cost of dental care if 121,000 dentists and 110,000 subsidiary dental technicians were to be kept fully occupied would amount to approximately $10.70 per capita,* or nearly three times the $3.90 per capita now spent for dentistry. With the average spendable money income per capita in the United States as a whole equivalent to $776 in 1929, dental care alone, on the basis of present charges, would consume 1.4 per cent of the average per-capita spendable income.

There are no standards by which it is possible to judge the amount which people can or cannot reasonably afford to spend for dentistry or for any other form of medical care. In view of the fact that at least 10 per cent of the families in this country are unable to maintain a so-called minimum subsistence standard, it is doubtful if any immediate increase in the per-capita expenditures for dentistry is practicable under the present system of individual purchase.*

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* See Chapter VIII and Publication No. 25, listed at the end of this volume.

of $5,304 for all physicians and $5,467 for all private practitioners. Table 48 shows the distributions of physicians' professional net incomes and affords interesting comparisons between the financial returns of salaried and private practitioners. Whereas over 40 per cent of the physicians in private practice had net incomes of less than $3,000 in 1929, only 13.2 per cent of the salaried practitioners were under this income level; although 76 per cent of the private practitioners received less than $7,000, 92 per cent of the salaried physicians were below this level. Conversely, 24 per cent of the physicians who assumed the business risk of private practice received net incomes of more than $7,000, whereas less than 8 per cent of the physicians who accepted salaried positions received more than this amount. About 2.2 per cent of the salaried group had net incomes of $10,000 or more, whereas over 14 per cent of the physicians in practice for themselves surpassed this mark.

TABLE 47

PROFESSIONAL INCOMES OF SALARIED PHYSICIANS

Service	Net Incomes(a)	
	Mean	Median
All	$4,524	$4,213
Commisioned officers in Army, Navy, and Public Health Service	5,212	5,200
Veterans' Administration and Non-Commissioned Public Health	4,312	4,177
Hospitals	4,192	3,794

(a) Includes maintenance, etc., and allowance for retirement ($500 for commissioned personnel of Army, Navy, and United States Public Health Service).

These figures tell their own story. A salaried position means an assured net income, yet it limits the income within a rather narrow range. Private practice sometimes entails a

private practitioners in 1929 were

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CHAPTER XIII

SALARIED PHYSICIANS AND DENTISTS

Although by far the greater number of the primary practitioners of medicine are engaged in independent private practice, 12 per cent of the active physicians in the country and 9 per cent of the dentists are employed on a full-time salary basis to render service in institutions such as hospitals or clinics or to serve specific groups of the population. Since the economic relation of salaried practitioners to their patients is very different from that of private practitioners, it is perhaps of interest to discuss them separately.

PHYSICIANS *

Of the 142,000 physicians in active practice in the United States in 1929, 121,000, or 85.5 per cent, were in independent private practice, 3,500, or 2.5 per cent, were assistants to physicians in private practice or were engaged in research, and approximately 17,000, or 12.0 per cent, held full-time positions from which they derived a salary. The distribution of these salaried physicians by type of employment was as follows:

	Number	Per Cent
All employed physicians	16,997	100.0
Federal positions	3,420	20.1
State hospitals	1,514	8.9
Other hospitals	5,443	32.0
Clinics	3,000	17.7
Industry	1,500	8.8
Teachers	1,300	7.7
Health departments (other than federal)	820	4.8

More than one-half of the salaried physicians are employed by hospitals and clinics; federal positions—Army, Navy, and Public Health Service, and the Veterans' Administration—are next in importance in point of numbers, and industrial medical services employ 1,500 physicians, or 8.8 per cent of the total employed.

Table 47 indicates the professional net incomes of salaried physicians in 1929, by type of employment. The average for all salaried physicians is $4,524 as compared with an average

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* Based on data in Publication No. 24, listed at the end of this volume.

of $5,304 for all physicians and $5,467 for all private practitioners. Table 48 shows the distributions of physicians' professional net incomes and affords interesting comparisons between the financial returns of salaried and private practitioners. Whereas over 40 per cent of the physicians in private practice had net incomes of less than $3,000 in 1929, only 13.2 per cent of the salaried practitioners were under this income level; although 76 per cent of the private practitioners received less than $7,000, 92 per cent of the salaried physicians were below this level. Conversely, 24 per cent of the physicians who assumed the business risk of private practice received net incomes of more than $7,000, whereas less than 8 per cent of the physicians who accepted salaried positions received more than this amount. About 2.2 per cent of the salaried group had net incomes of $10,000 or more, whereas over 14 per cent of the physicians in practice for themselves surpassed this mark.

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(a) Includes maintenance, etc., and allowance for retirement ($500 for commissioned personnel of Army, Navy, and United States Public Health Service).

These figures tell their own story. A salaried position means an assured net income, yet it limits the income within a rather narrow range. Private practice sometimes entails a deficit (5 per cent of the private practitioners in 1929 were unable to meet their professional expenses from their gross receipts) but at least six out of every hundred independent practitioners may hope to earn a net income of $15,000 or more a year.

Fig. 39 illustrates the differences in net income received by private practitioners—general practitioners, partial specialists, and complete specialists—and salaried physicians.

TABLE 48

ESTIMATES OF THE DISTRIBUTION OF PHYSICIANS' PROFESSIONAL NET INCOMES IN 1929

Net Income	In Each Income Class		In Each Income Class and All Preceding Classes (Cumulative)	
	Private Practitioners	Salaried Physicians	Private Practitioners	Salaried Physicians
	Percentage of Physicians			
Less than $ 0	4.9	.....	4.9	.....
$ 0– 1,000	7.4	0.3	12.3	0.3
1,000– 2,000	12.2	2.7	24.5	3.0
2,000– 3,000	16.2	10.2	40.7	13.2
3,000– 4,000	12.5	33.6	53.2	46.8
4,000– 5,000	9.5	24.3	62.7	71.1
5,000– 6,000	7.7	15.0	70.4	86.1
6,000– 7,000	5.4	6.3	75.8	92.4
7,000– 8,000	4.3	3.4	80.1	95.8
8,000– 9,000	3.2	1.1	83.3	96.9
9,000– 10,000	2.6	0.9	85.9	97.8
10,000– 11,000	2.6	0.9	88.5	98.7
11,000– 12,000	1.9	0.4	90.4	99.1
12,000– 13,000	1.5	0.4	91.9	99.5
13,000– 14,000	1.2	0.1	93.1	99.6
14,000– 15,000	0.8	0.1	93.9	99.7
15,000– 20,000	6.1	0.3	100.0	100.0
20,000– 25,000				
25,000– 50,000				
50,000– 75,000				
75,000–100,000				
100,000–250,000				
250,000–500,000				
Total	100.0	100.0	100.0	100.0
	Income			
Arithmetic mean	$5,467	$4,524	$5,467	$4,524
Median	3,705	4,213	3,705	4,213

The contrast between salaried physicians and private practitioners is greatest at the extremes. The average salary is only about $900 less than the average net income of all private practitioners; on the other hand, the median salary is approximately $500 higher than the median net income of the independent practice group. The fact that few salaried physicians have high incomes is offset by the absence of very low incomes and deficits. The major portion of the salaried group is concentrated within $2,000 on either side of the median, that is, between $2,000 and $6,000. These intervals include over 83 per cent of all the salaried physicians, 14 per cent having net professional incomes above $6,000 and the other 3 per cent below $2,000. The corresponding figures for private practitioners are 46 per cent between $2,000 and $6,000, 30 per cent above $6,000, and 24 per cent below $2,000.

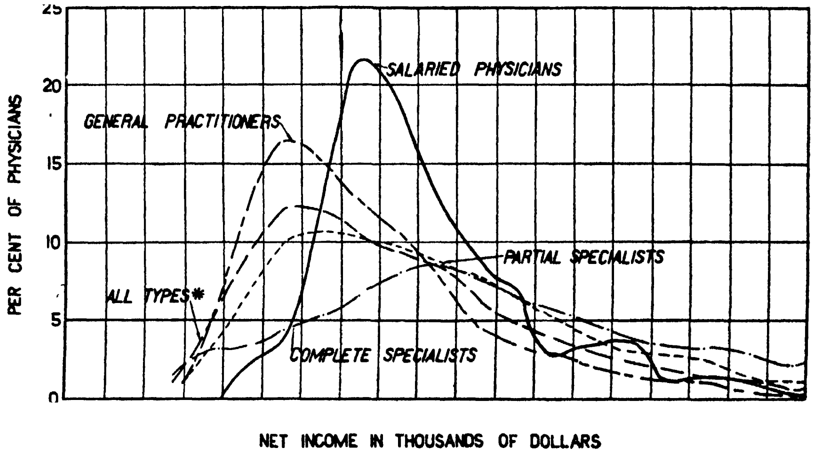

FIG. 39. MEDIAN NET INCOMES OF PHYSICIANS IN 1929, ACCORDING TO TYPE OF EMPLOYMENT AND TYPE OF PRACTICE

* All types indicate all private practitioners.

Furthermore, whereas 50 per cent of the private practitioners with the lowest incomes receive scarcely 17 per cent of the total income of the group, the lower 50 per cent of the salaried physicians obtain practically 37 per cent of the total salaries. The upper 10 per cent of the private practitioners account for

36 per cent of the net incomes, but the corresponding 10 per cent of the salaried physicians receive only 19 per cent of the total salaries.

In 1930, when private practitioners suffered large decreases in the percentage of their collections, physicians employed on a salary did not sustain a proportionate income reduction. In fact, for the physicians in the nation-wide sample of the Committee on the Costs of Medical Care * who held full-time salaried positions in 1929, the 1930 income was unchanged. What the lot of salaried physicians will be if the depression is prolonged cannot be foretold. It is not to be doubted that the closing or reduced operation of industrial plants will affect unfavorably the medical staffs of industrial services. Likewise the reduction in salaries of government employees has adversely affected the salaried physicians in federal employ, as well as those in state and municipal positions.

In the various committee surveys of organized medical services, the physicians were found to be almost unanimous in their satisfaction with an assured income and their freedom from direct financial dealings with patients.

DENTISTS †

Among the 62,400 dentists in active practice in the United States, 5,600, or 9 per cent, hold full-time salaried positions. Among the 56,800 dentists discussed in Chapter XII, approximately 5 per cent are engaged in part-time activities in hospitals, clinics, industrial health services, and health departments, but since the major part of the earnings of these part-time practitioners was derived from private practice, they are classed as private practitioners. A few private clinics organized and owned by medical practitioners have employed dentists to serve their patients and to carry on general practice. Some dentists have been admitted to partnership in medical organizations, and many are now members of hospital staffs.

Of the 5,600 dentists on full-time salary in 1929, at least 4,000 were in the employ of private practitioners. Positions as assistant dentist in a dental office are often taken by young

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* See Publication No. 24, listed at the end of this volume.

† Based on data from *The Practice of Dentistry and the Incomes of Dentists in Twenty States: 1929*, by Maurice Leven (University of Chicago Press, 1932).

graduates who after gaining practical experience establish themselves in independent private practice. Elimination of full-time salaried dentists who serve as assistants to private practitioners leaves but 1,600 dentists who are connected with organizations or institutions on a full-time basis. Of these, 571 are in the Army, the Navy, the Veterans' Administration, or the United States Public Health Service. This leaves only 1,029 full-time dentists to be distributed among industrial medical services, student health services, hospitals, clinics, and similar types of organized medical services. It is quite apparent that the practice of employing full-time dentists in organized services is not extensive in this country. Of the six universities, studied by the Committee * only one (Yale) had a full-time dentist. Of the three community medical services under industrial auspices, surveyed by the Committee, only one, the Endicott Johnson Workers Medical Service, employed full-time dentists.†

TABLE 49

AVERAGE NET INCOME OF DENTISTS, BY TYPE OF PRACTICE AND EMPLOYMENT, 1929

Type of Practitioner	Net Income	
	Mean	Median
All dentists	$4,575	$3,781
Salaried dentists	3,791	3,746
All private practitioners	4,653	3,801
General practitioners	4,428	3,720
Partial specialists	5,675	4,325
Complete specialists	8,378	6,760

Table 49 indicates the mean and median net incomes of salaried dentists as well as those of private practitioners. The mean and median salaries of dentists employed full time in organized dental practice are lower than the corresponding figures for all dentists and for all types of private practitioners with but one exception: the median income for the general practitioner is slightly lower.

When the percentage distributions of dentists according to net incomes are studied, however, the concentration of salaried

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* See Publication No. 19, listed at the end of this volume.

† See Publications No. 5, 18, and 20, listed at the end of this volume.

dentists around the median income is a conspicuous illustration of the financial stability of salaried practice (see Fig. 40). Approximately 25 per cent receive incomes of $1,000 to $3,000, 35 per cent receive from $3,000 to $4,000, and 25 per cent from $4,000 to $5,000. The 15 per cent who reach salary levels above $5,000 are almost all in the $5,000 to $6,000 class, for but 4 per cent of the total receive $6,000 per year or more.

Among private practitioners of dentistry, 5 per cent earn less than $1,000 a year net income, and some of these sustain deficits. The highest 10 per cent may receive net incomes from $8,000 to $54,000 annually. Whereas 50 per cent of the private practitioners are in the income range of $2,000 to $5,000, 81 per cent of the salaried dentists are in this class. The following tabulation indicates the percentages of all types of dentists in the income group $2,000 to $5,000 and below and above this level:

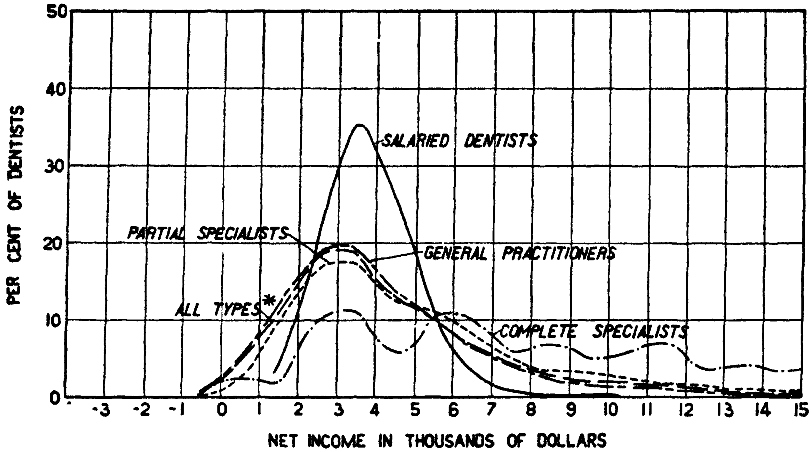

FIG. 40. MEDIAN NET INCOMES OF DENTISTS IN 1929, ACCORDING TO TYPE OF EMPLOYMENT AND TYPE OF PRACTICE

* All types indicate all private practitioners.

	Per Cent Below $2,000	Per Cent from $2,000 to $5,000	Per Cent $5,000 and Over
All dentists	15.7	53.0	31.3
Salaried dentists	4.6	80.8	14.6
All private practitioners	16.7	50.2	33.1
General practitioners	17.5	51.4	31.1
Partial specialists	12.3	45.8	41.9
Complete specialists	5.1	26.9	68.0

These figures illustrate in a striking fashion the relative stability of income for those dentists who hold salaried positions. They also show that, compared with complete specialists, the salaried dentists sacrifice prospects of higher-than-average incomes. Among complete specialists, 67 out of 100 receive incomes higher than the average; among partial specialists 42 in 100 surpass the average.

Private practitioners, on the other hand, run a greater risk of falling into the lower-than-average income class than do salaried dentists. About 18 in 100 earn less than $2,000 and 31 earn more than $5,000.

Attention should be drawn to the fact that many salaried positions carry with them retirement or annuity privileges. It has been estimated that the annual value of retirement pay for medical and dental officers in the United States Army, for example, is equivalent to $450 per annum.* Other perquisites, such as free medical care for the dentist and his family, living quarters provided by the employer, vacations, and provisions for postgraduate study at the employer's expense are also frequently associated with salaried practice.

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* See Publication No. 21, listed at the end of this volume.

CHAPTER XIV

NURSING: PRIVATE AND INSTITUTIONAL PRACTICE *

Care of the sick has been one of the traditional functions of women and therefore cannot be sharply defined as the particular prerogative of any one of the professional groups. This fact lies at the base of all discussions which have arisen over appropriate spheres in the care of the sick. Attendant service to the sick, particularly bedside nursing, has emerged gradually as a profession after many centuries during which its status was that of an activity incidental to household management. It may be said that only within the last 60 years has nursing been regarded in the United States as a professional activity. The first schools for nursing in this country were established about 1873, and in 1874 there were less than 20 trained nurses in the entire United States. By 1925, this number had increased to 275,000, of whom approximately 75,000 were still in training and were not yet licensed to engage in independent practice.

Although nursing is an infant profession, the numbers engaged in this work now exceed the total number of physicians or of dentists, even when untrained practical nurses are excluded from the calculation. Whereas the proportion of physicians in the population has been decreasing and has declined from 173 to 126 physicians per 100,000 members of the population between the years 1900 and 1930, the number of nurses per 100,000 population has increased during this period from 16 to 240, an increase of approximately 1,500 per cent!

The number of training schools for nurses has also increased during the last three decades, except that during the past two or three years a fairly large number of the smaller institutions have found it desirable to discontinue their training schools and to obtain registered nurses for service in the hospital at less cost than was previously incurred for the teaching, supervision, and maintenance of student nurses. The number of nurses' training schools reached its maximum in 1927 when

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* Much of the material in this chapter is drawn from a report prepared for this purpose by Ethel Johns, Nurse Associate, Committee on the Grading of Nursing Schools, *Monograph: Nursing as a Factor in Community Medical Service*, July, 1932.

more than 2,000 of the 7,000 registered hospitals maintained such schools. These 2,000 schools in 1929 had approximately 80,000 students of whom about 20,000 were licensed upon graduation. It is the opinion of the Committee on the Grading of Nursing Schools that schools of nursing should be greatly reduced in number and greatly improved in quality.

TYPES OF NURSES

Nurses may be grouped into two major categories and classified as either trained or untrained. Trained nurses are those who have graduated from a state-recognized school of nursing and are therefore eligible for registration after passing the required state examinations. After graduation, nurses serve in various capacities: as private duty nurses in the homes of patients, as special nurses in hospitals, or as institutional or staff nurses in hospitals, clinics, or organized medical services. If trained nurses meet the requirements of public health nursing organizations, they may enter the field of public health nursing. After additional experience and study, nurses may also enter the teaching field in schools of nursing and in departments of nursing connected with colleges and universities. The term "practical nurse" is frequently applied to trained attendants, licensed to practice under state law, as well as to nurses who have no licensure status because they have had no formal training. Nursing care in the home is the principal function of both these groups, although they are also employed in sanatoria and similar institutions. Practical nurses will be discussed later (p. 255). In the other sections of this chapter graduate (trained) nurses only are considered. The numbers of nurses and their types of employment are shown in Table 50.

TABLE 50

NUMBER OF NURSES AND TYPES OF SERVICE, 1930

Type of Service	Graduate Nurses	Student Nurses	Practical Nurses	Total
Private duty	118,000	......	150,000	268,000
Public health and industrial	18,800	......	....	18,800
Institutional	77,000	80,000	....	157,000
Total	213,800	80,000	150,000	443,800

Of 213,800 graduate nurses, 55.2 per cent are in private duty service and similar fields, 8.8 per cent in public health work and industrial medical service, and 36.0 per cent in institutions such as hospitals and clinics.

GEOGRAPHICAL CONCENTRATION OF GRADUATE NURSES

Nurses, like physicians, tend to concentrate in the larger cities and in the more populous states, where wealth is most concentrated and where hospitals are most numerous. Thus, rural communities with no local hospitals suffer greatly from the shortage of trained nurses.

Whether or not the rural residents would be able to support a trained nurse if one were available, is an open question. In Chester County, Tennessee—a rural county surveyed by the Committee—which had no graduate nurse, the 10,603 residents afforded the 8 physicians an average annual net income in 1930 of less than $1,000 each.* They paid the 8 practical nurses a total of about $2,500, or an average of little more than $300 per nurse. Graduate private duty nurses called in from Jackson, Tennessee, received a total of $275 for about 6 weeks of nursing service. These amounts represent the sum total of private duty graduate nursing service in the county during the year.

Both present and prospective needs, therefore, demand a more even distribution of graduate nurses throughout the population. The number of total graduate nurses (student, institutional, private duty, and public health including visiting nurses) per 100,000 population in 1930 varied from 81 in Mississippi to 589 in the District of Columbia. The distribution of graduate nurses by geographical sections and by states in 1930 is shown in Appendix Table 10-A, which also gives similar data for 1910 and 1920. At the present time there are slightly more than 8 active graduate nurses in every 5,000 people, or 1 nurse in every 590.

GRADUATE PRIVATE DUTY NURSES

The average gross income of graduate private duty nurses is approximately $1,200 per annum, and, since nurses presumably have no professional expenses, the net income is the same as the gross. On this basis, the total gross amount paid for the services of the 118,000 graduate nurses in private duty in 1930 is estimated as approximately $142,000,000, or $1.17 per capita for all residents of the United States.

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* See Publication No. 23. The year 1930 was one of severe, but not unusual, economic depression in the cotton belt.

The several factors (years of experience, size of community, etc.) which cause variations in the incomes of physicians and dentists, have only negligible influence upon the incomes of nurses. Immediately upon graduation a private duty nurse obtains the same average fee for twelve-hour duty as that which she charges after many years of experience. Fees for private duty nursing vary somewhat from community to community; but they are rarely less than $5 and seldom more than $8 per twelve-hour day, and in the main are uniform in a given locality and even within a state or section of the country.

Years of Service.—Although years of experience have little or no effect upon the unit charges of private duty nurses, age and experience are often factors in obtaining employment. In many of the community surveys of the Committee, field workers found younger graduate nurses expressing resentment against the more frequent employment of older women. It was stated that hospitals, registries, physicians, and patients were inclined to prefer older nurses.

It is estimated that the working period of a nurse is approximately seventeen years. This period, however, does not indicate continuous employment, for very few graduate nurses are constantly on duty. Approximately 20 to 25 per cent of the private duty nurses are married women and therefore may not be wholly dependent upon their income from nursing. For these women intermittent employment does not necessarily entail financial hardship, but for nurses who depend entirely upon their professional incomes for a livelihood, the irregularity of service and the long intervals of enforced idleness while waiting for calls constitute a serious economic problem.

Average Working Year and Incomes.—Data from community surveys of the Committee indicate that private duty nurses are employed for only twenty to thirty-seven weeks per year. In some instances the number of weeks of actual service was as low as five, and the nurse who reported full-time consecutive employment was a rare exception. A survey by the Massachusetts State Nurses' Association gives 33.8 weeks a year as an average working period of nurses in 1929, but this figure appears high in comparison with the samples of the Committee surveys.*

The average gross income of graduate private duty nurses ($1,200 per year) would indicate, at an average fee of $6 per day, only about thirty full weeks of service annually per nurse. A question at once arises, " Can the population of the United States give full-time employment to graduate private duty nurses in the care of the sick in their homes and in special nursing (as distinct from institutional nursing) for hospitalized patients? " If, for example, all graduate nurses now in private practice were to work for an average of 300 days a year and if the same average fee of $6 per day were maintained, each nurse, on the average, would receive an annual income of $1,800. On this basis, each person in the country would receive slightly more than 0.29 days of service per capita from trained nurses.†

A study of the amount of medical care which present-day standards of medicine would consider reasonably adequate for the American people estimates that a total of 0.54 days of private duty nursing service per capita would be requisite for the care of all acute and chronic diseases and conditions.‡ On this basis, almost twice the present number of graduate private duty nurses might be kept employed. These standards of adequate medical care represent, however, a potential rather than an effective demand. It is also conceivable that the amount of nursing service estimated as necessary for the total population could, if rendered on a visiting or hourly basis, be provided by even less than the number of nurses now in private duty practice.

Under present conditions a nurse may obtain relatively little experience in the type of service which she is required to render to patients in home duty. In spite of widespread unemployment, graduate private duty nurses are by no means willing to accept all types of cases. Their hospital training has been limited to practice under conditions of rigid routine and maximum convenience. It is small wonder that nurses so trained should prefer to serve hospitalized cases rather than to nurse home patients. Especially when the patient lives in the country in a house with few modern conveniences is it difficult to find a graduate nurse who is willing to adapt herself to primitive living and working conditions.

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* See especially, Publications No. 6, 12, and 18, listed at the end of this volume.

† By far the larger amount of hospital nursing is performed by student rather than by graduate nurses, see p. 268.

‡ Publication No. 22, listed at the end of this volume.

In a study made in Shelby County, Indiana, by the Committee on the Costs of Medical Care,* the following figures, obtained from a registry in Indianapolis, indicate the types of cases likely to be refused by graduate private duty nurses:

Total nurses registered	300
Willing to take any kind of case	86
Refusing obstetrical cases	56
Refusing contagious cases	100
Refusing mental cases	35
Refusing night duty	25
Refusing all but city calls	60

PRACTICAL NURSES

Although a high degree of skill, based on training and experience, is necessary to the practice of bedside nursing at a professional level, much of the bedside service rendered is of a type which can be provided either by some member of the family or by some person who has the knack of making patients comfortable. For this reason, a class of subsidiary attendants, or so-called practical nurses—who antedate the graduate nurse historically—offer competition to the trained nurse, and through their willingness to combine housework and domestic tasks with bedside care meet a very real need in households where the family routine is disrupted through the illness of the housekeeper.

The United States Census of 1930 indicates that approximately 150,000 women act as practical nurses, assisting in the medical care of the patient and performing duties in the home which will release or replace members of the family from domestic tasks. Many of these practical nurses carry on their occupation as a part-time activity and are not wholly dependent upon their income from nursing. It is estimated that the 150,000 untrained or practical nurses represent the equivalent of only about 50,000 full-time persons.

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* See Publication No. 6, listed at the end of this volume.

In some respects, practical nurses meet a very real need. Graduate nurses are often unwilling to accept cases in rural areas where none of the conveniences such as running hot water, modern sanitary devices, and domestic servants smooth the path of the technically trained sickbed attendant. Moreover, the practical nurse is almost always willing to serve as a domestic helper in preparing meals for the family and in keeping the household machinery in operation. Furthermore her charges are more nearly within the means of the average family than are those of the graduate nurse. Many physicians regularly recommend practical nurses for the care of their patients, considering that—when kept under constant supervision—an untrained attendant is able to do all that is necessary to make the patient comfortable.

In a recent study of the Committee, an estimate has been made of the amount of medical care required annually by the people of the United States, if they are to receive the preventive, diagnostic, and therapeutic services consistent with present-day standards of good care.* Of a total of 142,000 days of service per 100,000 population by trained or untrained nurses, 54,000 days, or 38 per cent, are considered as requiring the services of graduate nurses, and 88,000 days, or 62 per cent are listed as the type of service which might be rendered by an attendant nurse or by a mature or responsible member of the family. It is in furnishing this attendant service at smaller fees than for professional, graduate nursing and in helping with domestic tasks that practical nurses have a real place in solving some of the economic problems of medical care. As a group, they are especially valuable in the care of convalescent and chronic patients.

Some practical nurses are skillful, cleanly in their habits, and exceedingly useful to the public. Others are less satisfactory and in no sense useful from the standpoint of the patient's recovery. Some practical nurses are doubtless recruited from the many student nurses who fail to graduate from hospital training schools. These women have learned the simple nursing procedures as taught in the preliminary training-school term and are capable of giving routine nursing care of a simple kind. Other women have been taught by individual physicians, and others, self-taught, have acquired such skill as they possess by actual practice, occasionally supplemented by courses given in correspondence schools.

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* Publication No. 22, listed at the end of this volume.

It is evident that wide disparity exists in the qualifications of practical nurses. Unsupervised and with no definite limits set to the type of care which they are permitted to furnish, there is grave danger that they may attempt to serve cases which require far more skilled attention than their limited knowledge and experience qualify them to give. Unlicensed and unsupervised, they present a problem similar to that of midwives.

In 1923, the Committee for the Study of Nursing Education * recommended that steps be taken, through appropriate legislation, for the definition and licensure of a subsidiary grade of nursing service. However, very little progress has been made in the past decade in establishing training centers for secondary nursing groups. Possibly 25 schools for licensed attendants have been established. One of these is the Thomas Thompson School for Attendant Nurses in Brattleboro, Vermont.† In this school, the field of the attendant nurse is limited by definition to the " mildly ill, convalescent, and chronic case." It is further expected that the attendant will assist with household duties whenever this service is indicated as part of the family economy, but in offering this service to the community, major emphasis is placed on nursing and not on housekeeping.

Because of their intermittent employment, the practical nurses of the country probably obtain on the average scarcely more than $200 a year each, and approximately an equivalent amount in the form of maintenance while they are on duty. The gross income of practical nurses, including maintenance, is about $1,200 per year per full-time nurse. On the basis of an assumption that the 150,000 practical nurses employed in part-time service are equivalent to 50,000 full-time persons, the total gross amount spent for these practitioners in 1929 may be estimated as approximately $60,000,000.

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* *Nursing and Nursing Education in the United States*, New York, 1923.

† See Publication No. 17, listed at the end of this volume.

PUBLIC HEALTH NURSES *

Public health nursing is defined by the National Organization for Public Health Nursing as an organized community service rendered by graduate nurses to the individual, the family, and the community. This service includes the interpretation of medical, sanitary, and social procedures for the correction of defects, the prevention of disease, and the promotion of health. It may also include nursing care of the sick in their homes.

Public health nurses are employed by state, county, and municipal departments of health and boards of education, and by non-official health agencies such as visiting nurse associations, the American Red Cross, tuberculosis associations, industrial establishments, and child health associations.

Types of Service.—To permit convenient comparisons, the types of service given by public health nursing organizations are broadly classified into three groups: health supervision service, maternity service, and morbidity service. School nursing and industrial nursing, which embrace various combinations of the above, are separately classified.

Health supervision service is continuous surveillance over the health of supposedly well persons of any age group (exclusive of communicable disease contacts or suspects, and maternity cases); the individual is seen at intervals by the nurse and, on the basis of a medical examination by a physician, is taught the best methods of safeguarding health. This teaching relates particularly to nutrition, formation of habits of personal hygiene, and social and mental adjustments. Physical defects observed are reported to the physician, and patients are assisted in correcting them according to his advice.

Maternity service, given during pregnancy and during and after delivery, is health instruction with or without actual nursing care in the prenatal period, at the time of delivery, and during the postnatal period.

Morbidity service is the care given persons actually ill and may involve bedside nursing. It also includes such services as grow out of cases of illness, *e. g.*, the supervision of persons who are suspected of having a communicable disease or who are known to have been exposed to infection. Here, too, emphasis is laid on health teaching and on all the factors, psychological and environmental, which influence the health of the patient.

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* Much of the material in this section was taken from a paper prepared for the Committee on the Costs of Medical Care by Katherine Tucker, General Director of the National Organization for Public Health Nursing.

School nursing service is the care which is concerned with the health of pupils and school personnel, the maintenance of a healthful school environment, and the promotion of an adequate health program in the schools. Since the primary objective of the school nurse is the health of the child, not only within the school building but also in the home and the community, parental education is an important aspect of school nursing. Much of the work is carried on in cooperation with the teaching personnel.

Industrial nursing service consists of activities on behalf of the health of employees of commercial and industrial concerns. The industry itself pays for this service. Frequently care is rendered to employees within the establishment, but, in many instances, service is given outside the establishment to employees or to their families.*

Local town or city, county, and state agencies under official and non-official auspices are the major types of organization thus far evolved which have proved feasible for direct administration of public health nursing services, the type employed depending more or less upon the extent of local needs and resources. Increasingly there is a tendency to effect a correlation of all these services so that there may be greater uniformity of procedure throughout the entire state.

Within the local community organizations, the family nursing and health needs may be served:

(1) On a *visit* basis. It is assumed in this method that satisfactory service and instruction can be given within a limited period without necessitating strict adherence to a specific time schedule.

(2) On a *part-time* appointment basis. Patients wishing care at a specified time and needing more extended care than can be given on a visit basis who might otherwise be obliged to employ the full-time service of a private duty nurse, not infrequently can be given all the care that is necessary in one, two, or more hours by this method.

In connection with its bedside nursing service, it is expected that the public health nursing agency will instruct the families with which it comes in contact in simple nursing procedures in the care of the sick.

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* See p. 267 for further discussion of industrial nurses.

Thus it becomes evident that public health nursing is essentially a family nursing and health service, in that it strives to keep the family together while one of its members may be incapacitated because of illness and attempts to assist the family in the prevention of the physical and social maladjustments which tend to weaken the solidarity of the family unit.

Qualifications of Public Health Nurses.—With the trend in emphasis on prevention, additional preparation is recognized as a necessary supplement to the nurse's basic training for the field of public health nursing. Desirable minimum qualifications * for those appointed to positions in public health nursing include—in addition to a fundamental nursing education and state registration—services on a public health nursing staff which provides well-qualified supervision and postgraduate courses whenever possible.

Recently a committee of the National Organization for Public Health Nursing published a statement of qualifications for different types of public health nursing positions. Briefly, these qualifications, which have been approved by the American Public Health Association, are:

(1) For the nurse on a staff providing well-qualified nurse supervision—at least high-school graduation or its educational equivalent; graduation from an accredited nursing school connected with a general hospital where there is a daily average of 30 patients or more and a curriculum including theoretical and practical instruction in medical, surgical, obstetrical, and pediatric nursing; state nurse registration.

(2) For nurses working alone without qualified supervision, the following additional requirements—at least six weeks' instruction in public health nursing and one year's experience under adequate supervision; or two years' experience under adequate supervision; or a public health nursing course endorsed by the National Organization for Public Health Nursing.

(3) For supervisors or executives of a public health nursing organization this additional qualification—at least one year's experience in a well-organized public health nursing agency and, if possible, a public health nursing course endorsed by the National Organization for Public Health Nursing. Qualifications of personality are recognized as essential.

Distribution of Public Health Nurses.*—The number of public health nurses in the country as a whole has grown from* slightly more than 11,000 in 1924 to about 16,000 in 1931. Appendix Table 11-A indicates the number of public health nurses per 100,000 of the population in the various states in the Union. It will be observed that Connecticut with 32 nurses to every 100,000 persons has the highest ratio and Mississippi, with 2 nurses to every 100,000 persons the lowest. New England as a whole shows the largest number of nurses in this field per 100,000, with a range from 34 to 14. The West South Central States, as a group, show the lowest number, with a minimum of 3 and a maximum of 5 public health nurses per 100,000. Below the Mason and Dixon Line, no state has a larger number than 10 per 100,000 persons.

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* "Minimum Qualifications for Those Appointed to Positions in Public Health Nursing," The Public Health Nurse, May, 1931, Vol. XXIII, p. 230.

A recent report * presents the estimate that 44 visiting and public health nurses are required per 100,000 persons, according to best present-day standards of good medical care. This would require more than 54,000 public health and visiting nurses for the United States as a whole, or more than three times the present number.

The latest data which indicate the distribution of public health nurses by size of community apply to the year 1924. At that time more than 52 per cent of the nurses were in cities of 100,000 population and over, whereas communities of this size contained only 26 per cent of the total population of the country. Cities of 50,000 to 100,000 population contained 5 per cent of the population and 9 per cent of the nurses; towns of 10,000 to 50,000 inhabitants contained 11 per cent of the population and 18 per cent of the nurses; and communities less than 10,000 in size had 58 per cent of the population and only 20 per cent of the nurses.

According *to the* findings of the White House Conference,† *in 1929 a total of 6,381 public health nurses served 89 cities* with an average *ratio of 24.6 nurses per 100,000 population.* In 72 smaller cities, 892 nurses provide a ratio of 19.8 nurses per 100,000 population. In municipalities, the increase in number of public health nurses has been more rapid than the increase *in population. Data for 75* cities showed in 1923 an average ratio of 18.3 nurses per 100,000. In 1929, 24.4 nurses per 100,000 were serving the population of these same communities.

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* See Publication No. 22, listed at the end of this volume.

† *Section II, Public Health Service and Administration*, Committee on Public Health Organization, White House Conference on Child Health and Protection (The Century Co., New York, 1932), Vol II A, p. 42.

The organization of public health nursing services has changed substantially in recent years. Administered at first by voluntary groups, the work, especially in the larger communities, is increasingly accepted as an integral part of official health organizations—city, county, state, and national. According to the 1924 census, 52 per cent of all agencies employing public health nurses were under official or joint official and non-official administration. These agencies employed 57 per cent of the total number of public health nurses. In 1931, 63 per cent of the agencies and 61 per cent of the nurses were under official or combined direction. Increasingly there is a tendency for joint administration through the affiliation of official and non-official groups.

Table 51 indicates further the distribution of agencies and nurses according to administrative auspices. Since this table gives data for 1924 and for 1931, it is possible to note the particular types of organization which have expanded in numbers as well as in nursing personnel during the seven-year interval. The total official agencies have increased 61 per cent in numbers and 51 per cent in the number of nurses employed. The total number of non-official agencies in 1931 was only 1.4 per cent higher than in 1924, but in the seven-year period the number of public health nurses in these agencies has been increased 29 per cent. Agencies under joint administration of official and non-official auspices have shown the largest percentage increases: 140 per cent in number of agencies and 143 per cent in number of nurses employed. One of the most significant increases in any one type of organization is to be found in the number of boards of education which employ public health nurses and in the number of nurses so employed.

Yet, in spite of relatively rapid increase in public health activities throughout the country, 1,619 counties of the United States in 1931 lacked any form of public health nursing, and 372 counties had such service available in only part of their areas. Table 52 summarizes data for local nursing service available in 1924 and 1931. It will be noted that in the seven-year interval the percentage of counties with no local nursing service declined only from 59 to 53.

TABLE 51

DISTRIBUTION OF PUBLIC HEALTH NURSES BY ADMINISTRATIVE AUSPICES, JANUARY 1, 1924, AND JANUARY 15, 1931

Auspices	Number of Agencies			Number of Full-time Graduate Nurses		
	1924	1931	Per Cent Increase or Decrease	1924	1931	Per Cent Increase or Decrease
National agencies, total	7	10	42.9	485	273	−43.7
Official	3	4	33.3	422	211	−50.0
Non-official	4	6	50.0	63	62	− 1.6
State agencies, total	79	76	−3.8	581	577	− 0.7
Official	59	56	−5.1	537	496	− 7.6
Non-official	20	20	0	44	81	84.1
Local agencies, total	1,603	2,627	63.9	5,402	8,904	64.8
Official:						
Boards of health	515	867	68.3	3,169	5,124	61.7
Boards of education	821	1,349	64.3	1,772	2,979	68.1
Other official boards	229	347	51.5	415	709	70.8
Joint administration, two or more boards	38	64	68.4	46	92	100.0
Non-official	1,550	1,570	1.3	4,666	6,021	29.0
Public health nursing association and similar agencies	398	464	16.6	2,516	3,622	44.0
American Red Cross chapters and branches	473	268	−43.3	574	430	−25.1
Tuberculosis and public health associations	231	255	10.4	352	433	23.0
Life insurance nursing services	181	330	82.3	258	537	108.1
Other non-official agencies	243	232	−4.5	936	944	0.9
Joint administration, two or more non-official agencies	24	21	−12.5	30	55	83.3
Joint official and non-official	30	72	140.0	37	90	143.2
Total	3,269	4,355	33.2	11,171	15,865	42.0

The Committee on Public Health Organization of the White House Conference has discussed in detail the problems involved in the correlation of nursing activities in a community. A few quotations from their report may be of interest:

"Special efforts should be made by the non-official agencies to get together, not only with the official authorities but with each other, and to agree upon a concerted and reasonably balanced program for community health promotion. In many cities, health councils have been established with notable success. . . . . The doctrines of cooperation and coordination . . . . could be greatly furthered by providing machinery for effective common action. . . . .

"Even where the respective fields of the voluntary and the official agencies are mutually respected, there is often lamentable duplication and waste of effort. The American Child Health Association's study of 86 cities, in the 40,000 to 70,000 population group, showed that, in these relatively small communities, public health nursing was performed by 1 agency only in 8 cities, by 2 agencies in 31 cities, by 3 agencies in 25 cities, by 4 agencies in 15 cities, by 5 agencies in 4 cities,and by 6 agencies in 3 cities! Such subdivision of public health nursing means not only economic waste but also ineffective service, since a generalized nursing program has, again and again, proved its efficiency as well as its economy.

TABLE 52

LOCAL PUBLIC HEALTH NURSING SERVICE, NUMBER AND PER CENT OF COUNTIES IN 1924 AND IN 1931 WITH LOCAL NURSING FOR ENTIRE AREA, FOR PART OF AREA, AND FOR NONE OF AREA

Local Nursing Service	1924		1931	
	Number of Counties	Per Cent of Counties	Number of Counties	Per Cent of Counties
Entire area	866	29	1,081	35
Part of area	379	12	372	12
Lacking	1,800	59	1,619	53
Total	3,045	100	3,072	100

"It is particularly unfortunate that the trend toward amalgamation has recently received serious setbacks in rural areas where such amalgamation is peculiarly logical. The American Red Cross, while it seeks to make public health nursing 'a public service, tax-supported' and authorizes its chapters 'to support the service from its own funds or jointly with the public authorities over a considerable period of years until its continuation by public funds on a permanent and adequate basis is definitely assured,' has found it difficult to make satisfactory arrangements for joint service in many county health units. It states that 'the health officer in the unit usually insists on concentrating all authority in his own hands while the Red Cross takes the stand that financial participation should be accompanied by a due measure of control over the work paid for.' The Metropolitan Life Insurance Company has recently adopted the policy of creating its own independent nursing services or of cooperating with non-official nursing agencies rather than with health departments. . . . .

"In several instances the state [tuberculosis] associations report transfer of demonstration nursing services to official agencies. . . . . In other cases, nursing service under public authorities is supported by grants from the tuberculosis association. . . . . Finally, in a third group of states, nursing service operated by the state and local associations is correlated directly and effectively with the work of the public authorities. . . . .

"The advantages of non-official or joint operation are not primarily that their leadership often ensures a higher quality of service than the official agencies can offer, although such is often the case, but they are, to a more important degree, that the non-official agency is often free to offer an entirely different and a sounder form of service. Thus, the generalized type of nursing, combining bedside care and health teaching, is almost universally admitted to be the best. Yet official agencies are often precluded from adopting it by their traditional policies. In the 1920 survey by the American Public Health Association it was found that 80 per cent of the nurses working under public auspices were rendering purely instructive service and only 10 per cent a completely generalized service. But 16 per cent of the nurses under non-official auspices gave instructive service only, and 73 per cent gave complete generalized service. It is this same difficulty in working out a well-organized plan for bedside nursing service which has caused the Metropolitan Life Insurance Company to limit its cooperation to unofficial health organizations. . . . .

"If the experience of England gives us any guidance, we may perhaps look for the carrying on of many local nursing, clinic, and education services by non-official agencies on a contractual basis with appropriations from the public funds. Such developments on a small scale have taken place in a number of American communities. That they need not imply any weakening of official leadership may be inferred from the experience of the city of New Haven where the appointment of a full-time director of tuberculosis in the city health department coincided with the transfer of clinic activities to the New Haven dispensary and of nursing activities to the Visiting Nurse Association. Duplication was avoided, quality of service improved and leadership in the whole program vested in the health department."

Incomes of Public Health Nurses.—It is estimated that the average salary for public health nurses is $1,720 a year. On this basis, approximately $27,290,000 is spent by the people of the United States for this service.

In contrast to private duty nurses, public health nurses' salaries increase with years of experience, as may be observed from Fig. 41. The data plotted in the chart are based upon reports gathered in 1927. In public health nursing the average is low because of the large proportion of staff nurses compared with executives. The median salary for public health nurses is $1,685. One-fourth of the nurses received $1,503 or less and the one-fourth in the highest income group received $1,892 or more.*

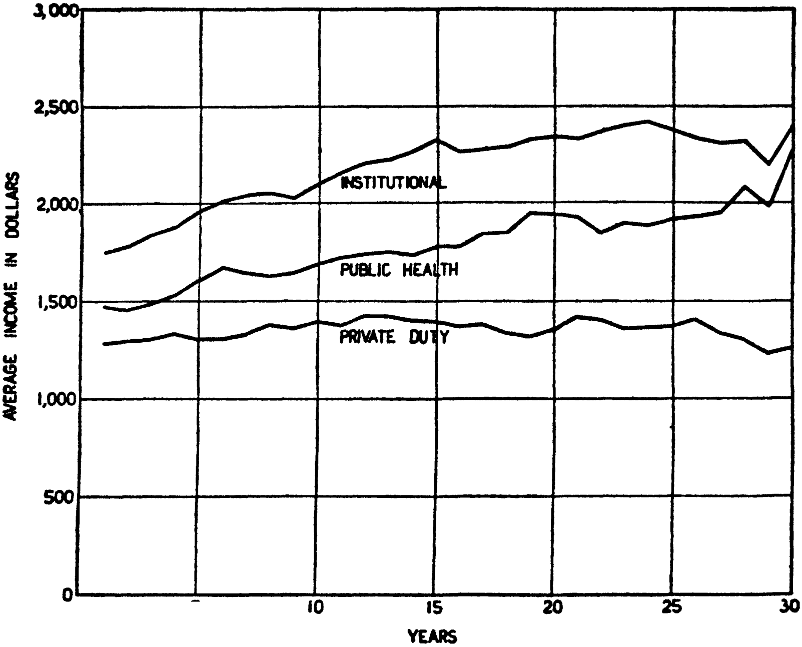

FIG. 41. AVERAGE INCOMES OF INSTITUTIONAL, PUBLIC HEALTH, AND PRIVATE DUTY NURSES, 1927, ACCORDING TO YEARS OF EXPERIENCE

From *Nurses—Production, Education, Distribution, and Pay*, The Committee on the Grading of Nursing Schools (New York, May 1, 1930), p. 27. Institutional salaries include a flat allowance of $500 a year for maintenance.

Financial support for public health nursing may come from taxes, from patients' fees, from payment by contracting insurance companies and industries, and from individual or community chest contributions. According to the 1924 census of public health nursing (the latest figures available), 25 per cent of the agencies were supported entirely by private funds, 28 per cent by combined private and public funds, and 47 per cent entirely by tax funds. Information was not available with regard to the amounts of money received from the various sources of support.

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* Inasmuch as public health nurses ordinarily pay for their own board and lodging, the actual size of income for this group is not altogether comparable with income for institutional nurses (see p. 272).

There is a growing feeling in the minds of those in the public health field that the educational services of public health nursing should be as free as education in public schools. At the same time it is almost universally recognized that families should pay, as their economic circumstances permit, for the actual personal services received. As a general rule, however, all nursing services of public agencies are free. (There are occasional exceptions, especially in the case of services supported simultaneously by private and public funds, or of bedside nursing care when this is included among the services of a health department.) Private agencies usually do not charge for health supervision service (except occasionally for prenatal visits), since most communities are not yet sufficiently aware of the value of health teaching to pay for it. However, most private agencies charge for bedside nursing visits in the home, if the family can pay.

INDUSTRIAL NURSES

Approximately 3,000 graduate nurses are employed in industrial health services at an average annual salary of about $1,500. Although the number of industrial establishments with complete health services is not large, many engage a nurse to administer first-aid treatments and to take charge of rest rooms. In the more elaborate industrial medical services, nurses are engaged to serve as assistants to physicians in offices, in clinics, and in the company hospitals. In some community medical services operated under industrial auspices, visiting nurses are also employed to serve the industrial population.*

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* See, for example, Publication No. 30, listed at the end of this volume.

INSTITUTIONAL NURSES

A committee of the American Nurses' Association has defined the duties of two of the many groups which fall within this category as follows:

> General staff nurses: Graduate nurses who render general nursing service in any department of a hospital and are permanent members of the staff.
>
> "Group" nurses: Graduate nurses who give nursing care to patients who are "grouped" on a special ward or unit for the purpose of receiving nursing care of a specific quality and cost. The nurses so employed, though permanent members of the hospital staff, cannot, as in the case of general staff nurses, be assigned to any other department.

Other institutional nurses include administrative officers, supervisors and head nurses, and nurses employed in special departments such as operating rooms and metabolism units, in out-patient departments, and in admitting rooms. The increasing complexity of institutional care of the sick is reflected in the variety of demands made upon institutional nurses.

Student Nurses and Nursing Education.—In a survey conducted by Dr. Malcolm T. MacEachern * in 1929, there were shown to be approximately 7,000 hospitals in the United States. Of this number about one-third (2,205) either operated a school of nursing or were affiliated with one. In these particular institutions were found about 90 per cent of all the hospital beds in the country. It follows, therefore, that only about 10 per cent of all hospital patients are cared for exclusively by graduate nurses. In the vast majority of hospitals of over 100 beds, student nurses, learning by a modification of the apprenticeship method, gain experience and acquire skill while giving bedside care to patients under the supervision of graduate nurses. In return for this service, the hospital offers maintenance and, sometimes, a small cash allowance as well as tuition and clinical experience.

Recent studies made by the Committee on the Grading of Nursing Schools † and by the Massachusetts General Hospital ‡ show that student service usually costs the hospital far less than graduate service. Exceptions to this general rule are found in hospitals having a daily average of less than 20 patients, which, as shown in a study made for the Duke Endowment by Graham Lee Davis,* find it less expensive to use graduate service. The larger institutions, however, have been able to effect substantial economies by using students to carry the bulk of the bedside nursing load and by confining their graduate staffs to the minimum required for administration, teaching, and supervisory purposes.

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* Malcolm T. MacEachern, "Factors That Influence Ratio of Personnel to Patients," *Modern Hospital*, November, 1930, Vol. XXXV, p. 59.

† May Ayres Burgess, "What the Cost Study Showed," *American Journal of Nursing*, April, 1932, Vol. XXXII, p. 427.

‡ "A Study of the Yearly Expenses of the Training School for Nurses at the Massachusetts General Hospital," Patterson, Teele, and Dennis, Accountants and Auditors, *The Bulletin of the American Hospital Association*, April, 1932, Vol. 6, No. 4, p. 41.

About 25,000 nurses are graduated annually, relatively few of whom are retained by the hospitals because their places in the wards are filled by the incoming class of students. The large majority, unless they can qualify for and obtain employment in the field of public health, are compelled to enter the already overcrowded ranks of private duty nursing.

The Ratio of Nurses to Patients.—The number of nurses required to care for patients depends greatly upon the size, construction, type, and policy of a given hospital. In general, the larger the hospital the lower the ratio of nurses to patients. It has been found that a hospital built with many stories needs a smaller staff and corps of employees than one which is spread over larger territory. The lowest ratio of all is found in large institutions for custodial, ambulatory, convalescent, or chronic patients who require a relatively small amount of technical bedside care. In these institutions, one nurse may be in charge of as many as sixty patients. Within general hospitals the ratio of nurses to patients varies considerably by section: mental, pediatric, obstetric, and surgical wards all require a higher-than-average ratio of nurses to patients.† The policy of employing nurses' aids, orderlies, and maids to perform many of the non-technical services greatly reduces the number of nurses required.

It is obvious that no fixed ratio of nurses to patients can be categorically established as an ideal. A comprehensive discussion of this problem has been prepared by Cristiane Reimann who has reported on data from six countries, including the United States.* In Fig. 42, prepared from her data, are shown the numbers of student and graduate nurses according to the daily average numbers of patients in United States hospitals.

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* Graham Lee Davis, "$83,000.00 Loss in 12 Hospitals Due to Nursing Schools," *Hospital Management*, August, 1931, Vol. XXXII, p. 21.

† Malcolm T. MacEachern, "Factors That Influence Ratio of Personnel to Patients," *The Modern Hospital*, October, 1930, Vol. XXXV, p. 78.

In a study of 1,196 approved hospitals of the total of 1,266 included in the 1928 list of accredited nursing schools of the American Nurses' Association, MacEachern found the average ratio to be 0.62, or approximately two-thirds of a nurse per patient. The ratio varied from 1.53 to 0.02 nurses per patient, the latter in a municipal home and hospital. Of the entire list, only 83 hospitals had one or more nurses for every patient.†

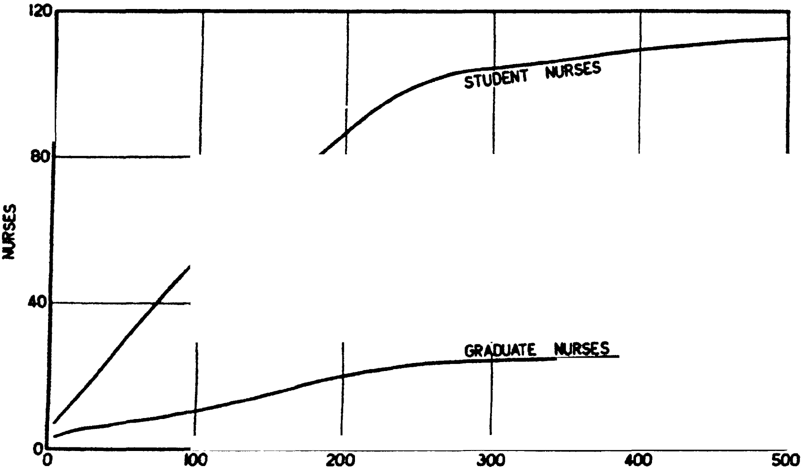

FIG. 42. NUMBERS OF GRADUATE NURSES AND OF STUDENT NURSES, ACCORDING TO AVERAGE DAILY NUMBER OF PATIENTS

Except in the hospitals with very low average numbers of patients, student nurses comprise approximately 80 per cent of the nursing personnel in general hospitals with training schools. The majority of graduate nurses in hospitals with training schools are in general administrative positions (superintendents, instructors, and supervisors). They also serve as operating and delivery room nurses and as head nurses and floor duty nurses.

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* "Some Observations on the Ratio of Nurses to Patients," by Cristiane Reimann, *Nosokomeion*, Supplementary Number, 1931, W. Kohlhammer, Stuttgart, Germany.

† Malcolm T. MacEachern, "Factors That Influence Ratio of Hospital Personnel to Patients," *Modern Hospital*, November, 1930, Vol. XXXV, p. 59.

Demand for Institutional Nursing in Relation to Supply.—The demand for institutional nurses is closely related to the demand for student nurses. Many hospitals employ as few graduate nurses as possible and carry on their nursing service by means of students. The estimated present ratio of graduate institutional nurses to population is 1 to 1,594. It is probable that, unless hospitals reduce the enrollment in their schools of nursing, the supply of graduate institutional nurses will remain more than adequate to the demand.

The hospital which conducts a nursing school offers maintenance, clinical experience, and instruction in return for the student's services. This arrangement is justifiable only when both parties fulfill their obligations to each other and to the patients. The tendency in recent years has been toward an undue multiplication of weak schools which could not fulfill their obligations and which admitted students incapable of qualifying as professional nurses. The supply of student nurses will continue to be more than adequate, in point of numbers, until this tendency is checked by more restrictive legislation affecting the establishment and administration of schools of nursing. It is encouraging to note that many hospitals are investigating ways and means of substituting other labor for that of students under conditions financially advantageous to themselves.

In the past, many student nurses have benefitted by a system which permitted them to pay for their education and maintenance in terms of work. So long as the present economic depression lasts, well-qualified women will continue to seek such opportunity; but it must be remembered that, in former years when economic conditions were less stringent, it was becoming progressively more difficult to attract students of the caliber desired. The nursing field was known to be so overcrowded and dilution in quality was already so apparent that discriminating women preferred to engage in other occupations.

An important development of the last decade is the establishment of several university nursing schools, endowed and administered like Class A medical schools and attracting students with high educational qualifications. These schools, though few in numbers, have provided a leaven which has begun to influence both nursing education and nursing service.

Incomes of Institutional Nurses.—Unlike private duty nurses, the graduate nurses in institutional positions may look forward to increase in salary level with increasing years of experience. Fig. 41, which gives data for 1927, indicates the steady advance in salary during the first fifteen years of practice. From the fifteenth to the thirtieth years of experience in institutional work the salary increases are more gradual until a maximum of approximately $2,400, including a nominal allowance of $500 per year for maintenance, is reached. The general average for all graduate institutional nurses in 1927 was an annual salary of $2,079, including maintenance, and the median was $2,000. The lowest fourth of the nurses received $1,724 or less and the highest fourth received $2,338 or more.

In a study of the costs of medical care in San Joaquin County, California,* data were collected on the distribution of 74 private duty nurses and 69 institutional nurses according to income classes. It was found that nearly 30 per cent of the private duty nurses had annual cash incomes of less than $600, whereas nearly 81 per cent of the institutional nurses received more than this amount. Approximately 50 per cent of the private duty nurses had incomes of less than $1,000, whereas institutional nurses who received this amount were only 29 per cent of the total. The maximum income from private duty nursing was between $1,600 and $1,800, an income range which included only 5.4 per cent of the nurses. Of the institutional nurses 46.4 per cent were in or above this income group, and 5.8 per cent received $2,000 or more.

In 1930, the average salary of graduate nurses in institutional service was probably about $1,700, including an allowance of $500 for maintenance. On this basis, the American public spent approximately $131,000,000 for the services of these practitioners. About $916 a year each represents the cost of training the 80,000 student nurses, which brings the total to a little over $200,000,000 spent for hospital nursing care. Although this sum is properly to be charged against practitioners' services, it is never paid directly to the nurses.†

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* See Publication No. 12, listed at the end of this volume.

† In the total bill for all medical services given in Table 1, the cost of hospital nursing is included in amounts spent for hospitalization.

SUMMARY

The public pays nothing, or less than nothing directly, for the education of nurses. Students pay for their tuition, not in terms of money, but in terms of service rendered to the hospital—a service which costs the hospital less than that of graduate nurses. In view of these facts, it is not surprising that two correlative results have been achieved: in the first place, the profession has become overcrowded and cannot provide a stable and adequate remuneration to a large proportion of its members, and, in the second place, the twofold immediate economic gain (to the student nurse and to the hospital) has led to an undue multiplication of schools, some of which are decidedly mediocre in quality.

It is in the highly competitive field of private duty nursing that overcrowding and consequent economic maladjustment are most apparent. Here graduate nurses are forced to compete, not only with each other, but with large numbers of unlicensed practitioners as well. The average family cannot afford to employ her except in cases of serious illness and, for economic reasons, patients and physicians often prefer the services of nursing attendants. By far the greater number of calls for graduate private duty nurses come from acutely ill patients in hospitals who require highly skilled care rather than the combination of nursing and domestic service which is frequently called for in the home. When the well-being of the patient is at stake, a graduate nurse may and does perform these domestic tasks without any loss of professional dignity, but when these are exacted as a matter of course, there is a failure on the part of all concerned to differentiate between the relative values of professional and non-professional service. The choice of the appropriate worker in the home can only be made in the light of the needs of the patient. If he is seriously ill, skilled nursing such as a graduate nurse alone can give is essential; but if he only requires simple bedside care combined with a measure of assistance in his household, he may be adequately served by a less-trained practitioner.

The care of sick people, singly or in groups, either in their own homes or in hospitals, is the typical activity of the graduate nurse—a task which calls for the exercise of initiative and judgment as well as technical skill. In the absence of the physician she is expected to rise to any emergency, regardless of the limitations so rigorously imposed upon her under ordinary circumstances by the medical profession. At the same time, she must also be ready, when the occasion demands, to render service which is not professional in character and, without a knowledge of household management, she cannot serve the patient acceptably in the home, the hospital, or the public health field. There is considerable evidence, however, that the domestic aspect of nursing service and education has been overemphasized and that the nurse in training has been an apprentice and an employee of the hospital rather than a student and a potential professional practitioner. The nature and direction of her training have been guided by expediency rather than by professional requirements and she has been used to perform many tasks which had little or no educational significance or value.

Perhaps in no group of medical practitioners are the leaders more cognizant of the underlying economic problems of their profession. Since 1923, with the publication of the report on nursing education,* and with the publications of the more recent Committee on the Grading of Nursing Schools attention has been devoted to all aspects of the economic problems confronting the graduate nurse—numbers, incomes, distribution, competition from unlicensed groups, and adequacy of training. Actual progress has been made in the standardization of training-school curricula and in raising the standards of entrance requirements. At the present time, however, graduate nurses are not a homogeneous group with respect to education, qualifications, and professional ambition. Professional journals of nursing contain many editorials and articles on the social and economic problems inherent in the present organization of nursing service. One such article, in a recent number of the *American Journal of Nursing*, admirably summarizes both the economic maladjustments in the present situation and the attitude of leaders in the profession in their determination to remedy current difficulties.

"Let us enumerate: There are more nurses already in the field than are employed. Hospitals are continuing to take in students and turn them out to swell these numbers. At the same time the sick are going without nursing care. Nursing positions, both in institutions and in the public health field, which require persons of special preparation and ability are going unfilled. The mentally ill are on the increase. Preventive methods, hygiene, and nutrition need to be taught. Public schools in our great cities are woefully lacking in nursing service. Patients in many hospitals are not receiving sufficient nursing care. Many rural areas have no nurses.

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* Report of the Committee for the Study of Nursing Education, *op. cit.*

"As a matter of fact physicians, hospitals, and many nurses continue to think regarding both the preparation and employment of nurses in terms of a half century ago. There are many things that might be done and some of them must be done.

"Among them I will suggest that the time has come for (1) nursing schools to be set up as independent organizations with the education of the nurse as their aim. Our hospitals would continue to furnish abundant clinical experience for the students. (2) Every hospital which cannot show that it is justified in conducting a school on the grounds of education should cease to conduct a school and employ the now unemployed graduate. (3) We should secure the interest of the state in the preparation of nurses. It is as much a state function as is the preparation of teachers. (4) Students of nursing should pay for their education in money. Exchange of service for a diploma should cease, but it should be real education for which they pay. (5) Far higher and better qualifications for the practice of nursing should be set up—higher personal qualifications, higher general and professional education. The medical profession need have no fear; it is not the well-educated nurse who attempts to usurp the function of the physician. If we had wished to be physicians we would have entered the medical school. (6) Colleges and universities must be approached and urged to assume their responsibility in the preparation of nurses as they have assumed it in the preparation of teachers, dietitians, social service workers, librarians, and many other groups. (7) All persons who nurse for hire should be licensed by the state. (8) We must continue to find employment for those unemployed at the present time, but we would warn those who desire to continue to meet the increasing demands for nursing that they must continuously seek further preparation. This is no more than the world demands of all individuals."*

Briefly stated the central economic problem is as follows: a large number of hospitals very naturally seek to reduce their heavy operating expenses by conducting schools of nursing and utilizing students, instead of graduate nurses, as a working force. Upon graduation the majority of these students engage in private practice because no other avenue of employment is readily open to them. The field of private duty nursing is highly competitive because of the number of nurses already engaged in it and is further limited because the only persons

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* "What Are Nurses Going To Do About It?" Elizabeth C. Burgess, R. N., *American Jurnal of Nursing*, May, 1932, Vol. XXXII, p. 555-556.

who can afford to pay for the exclusive services of a single nurse belong to that restricted group which falls within the higher income brackets. Meanwhile, in so far as the great mass of the population is concerned, the need, as distinct from the effective demand for nursing service, goes unmet and will continue to do so until some system of distribution of nursing costs can be devised which will bridge the economic gap between patient and nurse. If the community were in a position to pay for adequate nursing service for all its members, the present apparent surplus of nurses might be transformed into a shortage. Under existing economic conditions such a contingency may seem remote but nevertheless it must come to pass if good medical care is to be made available to all the people.

In the long run the public will refuse to support adequately the entire membership of an overcrowded profession. If hospitals find that student nursing service is immediately less expensive than the services of graduate nurses, the hospital administrators and the community may find that the excess of graduate nurses is ultimately more costly to the public than the savings at first achieved.

CHAPTER XV

MIDWIVES, CHIROPODISTS, AND OPTOMETRISTS *

In the practice of medicine various subsidiary groups of practitioners have become established to perform limited services in the field of medical care. Some of these practitioners, because of the low fees which they charge, are more or less in competition with physicians. In this class may be placed the midwife and the optometrist. Another group—the chiropodists—have specialized in a limited form of treatment which encroaches little upon the domain of the doctor of medicine. How far these subsidiary practitioners may fit into a scheme of adequate medical service is a question which involves the ability of patients to pay as well as that of organizing the physician's time to the best advantage. In the main, these limited independent practitioners appear to have a place in our present system of medical care because their specialized training and constant practice give them in a limited field particular skill which physicians do not possess and because it would seem uneconomical for physicians to perform these services when their time might be spent more advantageously in services requiring greater professional training.

MIDWIVES *

In this country the word " midwife " is usually associated with the untrained and uneducated, superstitious old " granny " of the mountains and negro sections of the South, and is often used for the partially, but often poorly, trained woman who practices in urban districts. In foreign countries the word connotes quite a different type of person. Whether she is a graduate nurse who, in addition to her nurse's training, has taken a course in midwifery or whether she is trained for midwifery only, she is a person with professional standing and qualifications. In England it is more or less customary for a graduate nurse, after completing her training, to take a course in midwifery. In the continental countries where the length

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* For more detailed discussion of these practitioners, see Publication No. 15, listed at the end of this volume, the source of most of the data in this chapter.

of the midwifery course is usually two or three years, the midwives often are not graduate nurses.*

It is estimated that, in 1929, 47,000 midwives were practicing in the United States, largely concentrated in the South. Few of these women make a full-time vocation of their practice, for in this country trained nurse-midwives with high standards and qualifications have not formed a basic professional group as in Europe.

In some states midwives are licensed and supervised in their practice. In other states licenses are issued to these practitioners but they are given almost no supervision. In still other parts of the country, though prohibited by law, women act as midwives in defiance of legal restrictions. In 1930, the Committee on Prenatal and Maternal Care of the White House Conference on Child Health and Protection sent out to the various states a questionnaire to obtain data relative to midwives and the conditions of their practice. The data thus accumulated indicate that more than 80 per cent of all the midwives are in the South. Few other states have any appreciable number, and these few are northern states with a large, foreign, industrial population. Thus Illinois has 2,000 midwives; New York State, exclusive of Rochester, has 1,495 (of whom 1,203 are in New York City); Pennsylvania has 1,000; New Jersey has 405.

The southern midwife—usually colored—is often ignorant, untrained, dirty, and superstitious. Of 783 midwives surveyed in 15 counties in Texas, 570 were colored, 170 were Mexican, and 43 were white. Of the total, 60 per cent were illiterate and of 288 given a Wassermann test for syphilis, 22 per cent showed a positive reaction. Among 53 Kentucky midwives in 1923, Mrs. Mary E. Breckinridge † found only 12 who could read or write. They boasted that never, or very rarely, had they called a physician, and seemed to think that resorting to doctors for assistance would reflect upon their competency.

In the North, midwives, when unsupervised, are also apt to be ignorant, poorly trained, indifferently clean, and too little aware of their limitations. Under close supervision, such as obtains in New Jersey, New York City, and Philadelphia, these defects are largely remedied and midwives are found to be capable of giving a highly efficient type of maternity care. In Philadelphia, for example, a midwife must have received a suitable course of training in an approved school before she is allowed to practice. Close contact with her is maintained by the State Bureau of Medical Education and four physicians with special training in obstetrics instruct and supervise all midwives. In the main, facilities for the training of midwives are hopelessly inadequate, for only two or three approved schools of midwifery are operated in the United States.

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* *Income and Health in Remote Rural Areas,* Mary B. Willeford (New York City, 1932), p. 70.

† Mary E. Breckinridge, *Midwifery in the Kentucky Mountains; An Investigation,* 1924. Mimeographed manuscript, quoted in Publication No. 15, listed at the end of this volume.

In the light of the extensiveness of midwife practice, and the high maternal death rate prevailing in this country, the existing situation with respect to the legal control of midwives is little short of amazing. Nineteen states do not license midwives and another, Alabama, licenses them but exacts no penalty for practicing without a license. True, some of these states—Vermont, Maine, Iowa, Nebraska, and five others—have no midwives, or at least so few that there is no " midwife problem." But the rest include states such as Florida, New Mexico, Texas, Tennessee, and Arkansas, with thousands of midwives who attend a very appreciable proportion of the total births within the area.

Although 15 per cent of the total reported births in the United States were attended by midwives, this relatively large percentage may not indicate the full extent to which these practitioners are used, for many births, especially among negroes in the South, are never reported. It is probable that 30 per cent of the total number of children born in the South are delivered by midwives, and it may be safely estimated that these practitioners attend the births of more than one-half of the negro babies.

Three main reasons account for the demand for the services of midwives: the higher cost of physicians' services, the scarcity of physicians in rural districts, and habit and tradition. The last factor is sometimes independent of, and sometimes a result of, the other two.

In the last decade, the number of midwives and the proportion of births they attend have been decreasing rapidly, due partly to stricter supervision and licensure and partly to the restriction of immigration. Among many foreign groups there is a strong prejudice against having a male doctor perform childbed services. Among negroes in the South, the scarcity of physicians in rural districts and the poverty of large sections of the population are dominant reasons for the employment of midwives. For many years to come, economic factors will make it inevitable that an appreciable proportion of the births in this country, especially in rural areas, will be attended by midwives.

Only the roughest estimate of the amount of money annually expended for midwives' services can be made, for the fees charged by these practitioners vary widely from community to community. In urban centers in the North—such as New York, Philadelphia, and Detroit—the charges generally range between $20 and $35. In the South, midwives charge much less: occasionally their fees may be expressed in cents rather than in dollars. Assuming that $10 is an average fee for the country as a whole, and that the 300,000 births * estimated to have been attended by midwives in 1925 represent a fair approximation for the present day, a minimum of $3,000,000 is spent yearly for the services of midwives. This statement gives an inadequate impression of the importance of midwives in medical care. Upon these practitioners depend the outcome of almost 15 per cent of the confinements in this country and the life and well-being of 300,000 mothers and infants. For this reason it is pertinent to discuss the place which they hold or should hold in medical care.

The old-fashioned, untrained midwife has no more place in medical care than has the herb doctor or medicine man. Until recently members of the medical profession have felt that it was not worth while to attempt to educate her or to give her legal status. But conspicuous results have been achieved—notably in New Jersey, New York City, and Philadelphia—which have shown that midwives when closely supervised are capable of giving a highly efficient type of maternity care. Untrained midwives approach, and trained midwives surpass, the record of physicians in normal deliveries when maternal

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* Calculations based on Appendix Table 1-A of Publication No. 15, listed at the end of this volume, with estimates for the states from which no reports were obtained.

mortality rates are compared. A busy physician is often forced to employ procedures which will tend to hasten labor but which sometimes are detrimental to the health of mother and child, whereas a midwife is not permitted to employ such procedures and commonly has unlimited time at her disposal to await natural delivery.

That trained and educated midwives help solve the problem of the need for adequate care for mothers in childbirth is shown by the experience of other countries. Over 60 per cent of all births in England are attended by graduate midwives certified under the Central Midwives Board. The maternal mortality rate in England and Wales in 1929 was 4.3 per 1,000 live births. The Queen's Nurses of Great Britain, whose midwifery service cares for 40,000 to 50,000 women annually in England alone, have a maternal mortality rate of approximately one-half the national rate. In the Scandinavian countries graduate nurse-midwives attend a large proportion of the total number of births: Norway, 90 per cent; Sweden, 75 per cent; Denmark, 95 per cent. In 1929 the maternal mortality rates per 1,000 live births in these three countries were: Norway, 3.6; Sweden, 3.8; Denmark, 3.2. In the United States, the only section which uses graduate nurse-midwives is in the demonstration being made by the Frontier Nursing Service in Kentucky. In approximately 700 square miles of difficult and isolated territory covered by the service, the maternal mortality rate was 2.0, or less than one-third the national rate of 7.0 in 1929.*

Many physicians foresee the solution of the present problem of providing good obstetrical care in organized cooperation between the obstetrician and a professional nurse-midwife. As seen by her advocates the nurse-midwife is a trained nurse who, in addition to her regular nursing training, has studied for at least a year in a modern maternity hospital. Those who propose the development of such a practitioner believe that, working under the direction of an obstetrician and left in charge of normal cases only, she will give a highly satisfactory type of maternal care. Such a solution seems to hold promise of furnishing to the people of lower economic groups and in certain geographical areas better obstetrical care than they now receive and at a price which they can afford to pay.

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* *Income and Health in Remote Rural Areas*, by Mary B. Willeford (New York City, 1932). p. 71. See also *The Frontier Nursing Service*, Miscellaneous Contributions No. 10 of the Committee on the Costs of Medical Care.

CHIROPODISTS *

The work of the modern chiropodist is the diagnosis of foot ailments and the treatment of corns, bunions, and certain other local conditions of the feet. Logically the treatment of these ailments comes within the jurisdiction of the doctor of medicine; but physicians usually have considered such disorders as trivial, beneath their dignity, and not financially profitable. Accordingly medical schools have not taught their students specific care of these conditions and there has sprung up a class of individuals who make the care of these ailments their particular domain. By reason of training and practice these practitioners have attained skill and competency in their narrow specialty.

Approximately 4,925 chiropodists practice in the United States, located, for the most part, in the 39 states which regulate this branch of the healing profession. Their average gross income is probably not less than $3,000 per year, and on this basis it may be estimated that the American people spend at least $15,000,000, or about 12 cents per capita, for their services.

Before 1895, chiropody was learned through apprenticeship and was in no way regulated as a branch of healing, but recent legal restrictions excluding unqualified practitioners have done much to raise the status of the group.

Five recognized schools of chiropody now require a high-school education for entrance and give a two-year course of study which includes anatomy, histology, pathology, physiology, bacteriology, pharmacy, chemistry, surgery, chiropody, foot orthopedics, roentgenology, and similar subjects in a minimum of 2,300 hours, taught by no less than six doctors of medicine in each school. With this increase in educational qualifications there has been an attempt on the part of chiropodists to extend their scope of practice to include the treatment of all local ailments of the foot.

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* See Publication No. 15, listed at the end of this volume.

A consideration which has led some doctors of medicine to view with disfavor the existence of the chiropodists as independent practitioners is that the latter, lacking a general medical training, may be unable to recognize foot lesions due to constitutional conditions. A number of serious systemic diseases may give their first significant signs in the feet. In reply to these objections, the chiropodists argue that their schools now give sufficient training to enable chiropodists to recognize such conditions and to refer such cases to doctors of medicine for treatment. The community surveys of the Committee on the Costs of Medical Care have shown that chiropodists frequently refer patients to physicians.

Chiropody is a distinct and separate branch of the healing art. It has continued to exist and has flourished because chiropodists are able to supply service at a price which physicians cannot or will not meet. So long as physicians do not compete with chiropodists by offering the same service at an equal or lower price, it may be expected that chiropodists will continue to care for patients suffering with minor foot ailments. Within the group of chiropodists is a strongly professional element, which under the sponsorship of Maurice J. Lewi, M.D., is raising the professional standards of chiropody education and lifting the services of its practitioners from a craft to a professional status.

OPTOMETRISTS *

It is only within the last fifty or sixty years that methods have been developed to measure accurately the refractive error in the human eye. Previous to that time the work of improving vision through the use of eye-glasses was entirely in the hands of opticians and jewelers who sold their glasses with little if any attempt to adapt them to the specific eye conditions of the customer. In fact, most of the glasses sold were ready-made, and the customer would select by trial from the stock laid before him the pair which gave him the clearest vision. As methods of accurately ascertaining the refractive error in the eye were developed, both physicians and opticians began to apply this knowledge. Towards the turn of the century, refracting opticians began to call themselves optometrists.

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* See Publication No. 15, listed at the end of this volume.

There are approximately 20,200 optometrists licensed to practice in this country. It is probable, however, that the majority of these individuals do not devote their full time to the practice of optometry. Optometrists do more than one-half of the eye refractions in the United States. At least $50,000,000 is spent annually in this country for their services and for the glasses which they dispense.

Within the past three decades, legal regulation of the practice of optometry has been established throughout the United States. Notable improvements have been made in optometry education. At present, five of the optometry schools are affiliated with recognized universities.

There are two major trends in optometry at the present time. One of them is the trend toward professionalism. There is a marked tendency for optometrists to stress the professional service they render in making eye examinations and to assign to a subordinate place the sales of eye-glasses. An indication of this tendency is the fact that some optometrists are practicing in offices rather than in stores. A second major trend is that toward widening the scope of optometric practice. An increasing number of optometrists are making diagnostic tests of various sorts, such as urinalyses and measurement of blood pressure, and are making use of ocular physical therapy. Some optometrists apparently believe that refraction offers too narrow a basis for professionalized optometry and that eventually optometrists must assume full responsibility for eye care. They are therefore advocating an extension of the optometry curriculum.

There is a valid objection to the independent practice of optometrists on the ground that, lacking a general medical training, optometrists may be unable correctly to diagnose eye troubles, some of which may be due to errors of refraction, others to the presence of systemic disease. Nevertheless, it must be conceded that the public now requires the services of optometrists since, as the full report on this subject shows, the total number of properly qualified physicians in this country is quite insufficient to take care of the present volume of refraction work. Furthermore, even if there were enough ophthalmologists or oculists to do this work, it is not economically desirable that individuals whose professional training may have consumed seven or eight years should spend time in performing refractions, a technical task which in itself requires comparatively little training. The ophthalmologist who devotes his time to refraction is doing work for which he is overtrained. While so engaged, his general medical knowledge lies idle and constitutes an unused overhead for which patients must pay.

The ideal solution of this dilemma requires organized cooperation between ophthalmologists and optometrists. Under this arrangement the ophthalmologist would make the primary examination and then pass on to the optometrist the cases which require simply a determination of the refractive error.

SUMMARY AND CONCLUSIONS *

In this analysis of three types of secondary practitioners, the evidence indicates that they all perform necessary functions in medical care; they supply services which are needed and demanded. Yet the present place of these practitioners in medical care is not altogether satisfactory, or at least not so satisfactory as it conceivably might be.

Whether or not a trained midwife or nurse-midwife will have a logical place in the ultimate scheme of things obstetrical, it can be categorically denied that there is a place for the untrained and incompetent women who now comprise the vast proportion of this country's midwives. Patently, a first step in any program for the provision of better obstetrical care in this country must be the elevation of the standards of this group or their replacement by other and more competent practitioners.

On the whole, chiropodists and optometrists are better trained to practice in their branches of medical care than are the midwives in theirs. Both these groups hope to obtain professional status and eventually to win for themselves a place in the medical world similar to that now occupied by dentists.

From the point of view of the public's interest, there is one valid objection to the development of chiropody and optometry as specialties in the hands of practitioners distinct from doctors

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* For a more detailed discussion of the place of secondary practitioners in medical care, see Publication No. 15, listed at the end of this volume.

of medicine. The objection runs in these terms. The body is an entity; no part is separate to itself; each part, each organ, acts upon and is acted upon by the rest. The body, therefore, should be cared for only by those who understand it in its entirety—by those who have a general medical knowledge. On this same account, specialization in any phase of medical practice should only proceed on the basis of prior study—and in some instances, practice—of general medicine.

At the present time the chiropodists and optometrists are both attempting to meet this type of objection by lengthening their professional curricula and by requiring a new practitioner to possess a broader medical knowledge. Other things being equal, higher standards of training are undoubtedly advantageous. Yet does not this remedy meet one objection by raising others? In the first place, as educational standards are raised, higher prices for the services of these practitioners must inevitably result. In the second place, chiropody and optometry are such narrow specialties that aside from the recognition of general—and in the case of the eye, local—pathologic conditions, these practitioners do not need a general medical training.

These considerations compel the conclusion that the solution of the problems presented by the existence of chiropodists and optometrists lies not only in close but also in organized cooperation between these practitioners and doctors of medicine. A similar conclusion is inevitable with respect to midwives, even if a type much better trained than those now in the field should emerge. Nurses, physical therapists, laboratory and dental technicians, dental hygienists, are all in the category of auxiliary rather than independent practitioners. As auxiliaries to physicians and dentists, their continued existence is justified by two main considerations: (1) these practitioners, by dint of specialized training and constant practice, have attained a skill in their field which physicians and dentists do not possess; and, (2) it is uneconomical to employ a person whose time is more valuable when a person whose time is less valuable is available, always assuming that the latter is efficient for the limited purpose in view.

CHAPTER XVI

THE HEALING CULTS *

There are in the United States approximately 36,000 sectarian healing practitioners for whose services about $125,000,000 is spent annually. These individuals are not evenly distributed throughout the country; they are most numerous in the Pacific and middle-western sections. California attracts all types, and there are more sectarians in that state, both absolutely and in relation to population, than in any other state in the Union. The South, New England, and the Atlantic States have relatively few sectarian practitioners. The sectarians are concentrated in large population centers to an even greater extent than are doctors of medicine. Conversely, relative to their total numbers there are fewer sectarians than doctors of medicine in rural areas.

Consideration of the causes for the existence of medical sects is a necessary prelude to consideration of measures by which these sects may be eradicated. Many factors explain the existence of these groups. In the first place, certain very fundamental instincts support the cults. For those who have tried all other means without success, what is to be lost by venturing upon a new way to health? At any one time there are possibly hundreds of thousands of people whom medicine has not helped. Not being willing to suffer placidly, to consider their diseases incurable, such individuals are forever flinging themselves on the wheel of chance—trying each new cure as it comes along. So long as there are gaps in scientific knowledge, so long as physicians are still impotent before some diseases, so long will human beings, still basically superstitious and ignorant of the structure of the body and its functioning, try uncharted roads to health, whatever the danger to life and the cost in money.

But if the sects existed for only these reasons, their careers would be short and transitory. Osteopathy and Christian Science probably exist in part as reactions against—or because of certain deficiencies in—past or current medical prac-

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* This chapter is based on Publication No. 16, listed at the end of this volume.

tice. Neglect by the medical profession of physical therapy, especially massage, probably contributed to the rise of osteopathy. Similarly it is the opinion of many eminent physicians that the rise of Christian Science and the religious healing movement has been due very largely to physicians' disregard of mental, nervous, and emotional factors and their influence upon the health of the body. The declining importance of the general practitioner, who knew so well how to view the body as a whole, and the concurrent rise of a departmentalized specialism, have probably contributed to this. Many physicians believe that inattention of physicians to minor ailments has led patients to resort to cultists.

The sectarians are patronized by no one economic group, although well-to-do people consult cult healers somewhat more than do poorer people. It is interesting also that the well-to-do in the main patronize osteopaths, while the less well-to-do go principally to the chiropractors. This finding develops from a recent survey of 9,000 families in the United States.* Of all cases (in all the families surveyed) having an attendant for illness, 1.4 per cent consulted osteopaths, 1.2 per cent consulted chiropractors, and 3.2 per cent had some care from one or another of the types of sectarian healers. In the families with incomes of $5,000 to $10,000, 3.9 per cent of the cases which received some form of attention from practitioners received care from an osteopath, 1.2 per cent received care from a chiropractor, and in all 6.0 per cent were attended by a sectarian practitioner. In the families with incomes of $1,200 to $2,000 the percentages of cases receiving attention from sectarian healers were as follows: osteopaths, 0.7 per cent; chiropractors, 1.2 per cent; all sectarians, 2.2 per cent.

OSTEOPATHS †

Some 7,650 osteopaths practice in the United States and receive annually a gross income of approximately $42,000,000. On this basis, the people of this country pay about 35 cents per capita for the services of these practitioners, and the average gross income of the osteopath is approximately $5,500 per year.

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* See Publication No. 26, listed at the end of this volume.

† See Publication No. 16, listed at the end of this volume. The full report contains a bibliography of source material.

Of the groups listed as sectarian practitioners, the osteopaths have by far the highest professional and educational standards. The original osteopathic theory—taught by Andrew T. Still in 1892—has largely evaporated, and most schools of osteopathy now follow or have attempted to imitate the curricula of medical schools, and teach theories of disease, methods of diagnosis, and the use of generally recognized therapeutic agents. Osteopathic manipulation and the theory that disease is caused solely by the structural maladjustment of the human machine are now but a small part of present-day osteopathic education. Yet the educational standards of osteopathic schools are below those of recognized medical schools. Of seven osteopathic colleges in existence in 1930, only one required more than high-school training for entrance.

The licensure of osteopaths varies from place to place: in 28 states the osteopaths have their own examining boards; in the other states they take the examination of the regular state medical board, and in 13 of these states and the District of Columbia the osteopaths have at least one representative upon the board of examiners. The extent of practice permitted the osteopaths also varies widely; in 10 states and the District of Columbia, osteopaths have unlimited scope and may use surgery and drugs if they desire; in 18 of the remaining states, osteopaths are generally prohibited the use of surgery or drugs, or both. The osteopaths are making great efforts to break down these restrictions, and in general they seem to be succeeding.

Osteopathic physicians tend to concentrate in the larger cities where the opportunities for making a living from their specialty appear to be greatest. The urban concentration of osteopaths, however, is less marked than that of physicians. Throughout the country the ratio of osteopaths to physicians is 1 to 20, proportions varying greatly with different geographical areas. Osteopaths are relatively most numerous in the Pacific States and least numerous in the East South Central States. In the Pacific States the ratio is 1 osteopath to 9 physicians, whereas in the East South Central States the ratio is

1 to 68. The West North Central States contain a ratio of 1 osteopath to 10 physicians and the Mountain States 1 to 14 physicians. The three states in the Middle Atlantic group of New York, New Jersey, and Pennsylvania, contain but 1 osteopath to 31 physicians.

CHIROPRACTORS *

Chiropractic with its 16,000 practitioners is the largest medical sect now existing in this country. Chiropractic theory holds that all diseases and conditions are due to one cause—slight dislocation or subluxation of one or more of the spinal vertebræ, which causes pressure upon nerves of the spinal cord, and when this pressure is removed by employment of the "chiropractic thrust" the disease will be cured. This therapeutic procedure requires no medical diagnosis, inasmuch as both sign and cure are to be found in the spinal column. In the United States as a whole there are 10 physicians for each chiropractor. The states which have the largest ratio of chiropractors to physicians are almost all on the Pacific Coast, with the smallest proportions existing in the southern states. Wyoming has one chiropractor for every two physicians and Oregon and Kansas have one for every three. The following states have one chiropractor for every four physicians—California, Iowa, Nevada, New Mexico, and South Dakota.

No information is available relative to the distribution of chiropractors among cities of various size or for the country as a whole. However, a few states annually register and list their healing practitioners. In four states which require such registration—Colorado, Connecticut, Florida, and Minnesota—it was revealed that there is an even greater proportionate concentration of chiropractors than of physicians in large cities. For these four states as a whole, 14 per cent of the chiropractors were located in towns of less than 2,500 inhabitants as contrasted with 18 per cent of the physicians. As against 26 per cent of the doctors of medicine located in cities of 200,000 or more, there were 39 per cent of the chiropractors.

The growth of chiropractic has not been steady. From all accounts the sect developed rapidly from 1916 to 1923. In

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*See Publication No. 16, listed at the end of this volume. The full report contains a bibliography of source material.

that year chiropractic seems to have entered a depression which lasted until 1927 or 1928, and though it has revived somewhat since then, the good times of a decade ago have not returned.

Such data as the Committee on the Costs of Medical Care has accumulated in its community surveys * indicate that the chiropractors receive an average gross income of approximately $4,200 per year. On this basis, the people of the United States pay a total of about $63,000,000 annually for the services of chiropractors—an annual expenditure of about 52 cents per capita.

Beginning as an outlaw group, the chiropractors have been so successful in their legislative efforts that in all but 6 states they have won some measure of legal recognition. In 32 states the chiropractors have their own examining boards, composed wholly of chiropractors. The scope of practice permitted the chiropractors varies from state to state. In most places they are restricted to the use of chiropractic manipulation; in all states they are forbidden to use surgery and drugs; and 6 states refuse to license them. Nevertheless chiropractors practice in these states and carry on their work without a license—that is, illegally—and, notwithstanding legal prosecution, are apparently not less numerous there than in the states where they are licensed. To a certain extent it appears that the chiropractors have thriven upon legal prosecution and upon the opposition of organized medicine.

In some respects chiropractic appears to be following in the footsteps of osteopathy. Chiropractic theory is being modified and qualified—becoming conveniently loose and ambiguous. At the same time, the chiropractors are ceasing to depend solely upon chiropractic adjustments and are using physical therapy and such other healing agents as the law permits or they dare use in defiance of the law.

The chiropractors' ignorance of the fundamental facts of medical science and their inability to diagnose disease have in many cases led to disastrous results for those who have consulted them.

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* See Publications No. 6, 9, 12, 13, and 23, listed at the end of this volume.

NATUROPATHS AND OTHER DRUGLESS HEALERS *

The United States harbors a number of drugless healers who practice under a variety of names—naturopaths, sanipractors, neuropaths, spondylo-therapists, vitopaths, ærotherapists, and the like. It is estimated that approximately 2,500 of these healers, classified in at least 50 different categories, receive from the American people about $10,000,000 annually. Since only about 8 cents per capita is spent for the services of these miscellaneous healers, their economic importance is not great; but that the public sometimes consults these practitioners for diagnosis and therapy of grave physical disorders is a serious indictment of health education in this country.

The naturopaths form the largest sect in this heterogeneous group of practitioners. In 1927, the American Medical Association estimated that there existed 12 naturopathic colleges with not over 200 students. A few states provide for the licensing of naturopaths as limited practitioners. Applicants for license in these states are examined by a separate board and a high-school education and graduation from a naturopathic institution are the preliminary requirements for licensure. A large number of practitioners, however, are conducting their practice without license in defiance of the law.

The vast majority of the naturopaths and other drugless healers hold no single theory of disease. They employ a great diversity of drugless healing methods, some of them doubtless of therapeutic value.

FAITH HEALERS *

A very considerable number of the people today make a practice of healing through the instrumentality of religion or religious faith. It is estimated that in the United States at the present time there are at least ten thousand people in this category, most of them conducting their practice on a part-time basis and collecting as fees approximately $10,000,000 annually.

The largest and most prominent religious healing sect is that of Christian Science, which had approximately 9,000

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* See Publication No. 16, listed at the end of this volume. The full report contains a bibliography of source material.

healers in the United States in 1929, with some in every state in the Union. Christian Science practitioners are concentrated in larger cities to a slightly greater extent than are physicians; in 10 sample states 55 per cent were found in cities of over 200,000 population as compared with 48 per cent of the physicians.

The number of Christian Science practitioners has increased steadily since 1906 and apparently is still increasing although at a less rapid rate. In 1901 there were 3,000 practitioners and a similar number in 1906. Since that time each five-year period has shown a growth of approximately 1,000 until in 1931 there were estimated to be 8,848.

Other less known and less widely distributed groups of faith healers are the Church of the Universal Design; Jewish Science, founded by Rabbi Morris Lichtenstein in 1922 and concentrated chiefly in New York City; the New Thought movement which is said to include 1,000 healers; the Unity movement located primarily in the vicinity of Kansas City, Missouri. In addition to these, some of the other Christian denominations, particularly the Catholic and Episcopal churches, have given considerable attention to the problem of healing the sick.

Notwithstanding superficial dissimilarities, mainly of theory and dogma, the methods of these groups have much in common. They all seek in some way to introduce the idea of cure or health after preparing the mind to accept it. Their fundamental principle is that any idea possessing the mind tends to materialize in the body. Religious healers may induce patients to dispense with other types of treatment which are necessary and in this way delay scientific attention until the condition or disease is past remedy. Moreover, faith healing, like all other therapeutic agents, is frequently in the hands of untrained and unscrupulous practitioners. Faith healing should be limited in its application to the conditions for which it is appropriate and to those practitioners who realize its limitations.

THE CONTROL OF SECTARIAN PRACTICE *

Have these sectarian groups any proper or logical place in medical care? Although it is difficult to give a categorical

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* For a more detailed discussion of this problem, see Publication No. 16, listed at the end of this volume.

answer because the groups are so heterogeneous, the answer must nevertheless be "no." Of the non-religious sectarians, the osteopaths present the best claims. Yet the training received by this group is inferior to that of doctors of medicine, and the same factors which have caused the standards for physicians to be raised to a high level make undesirable the existence of practitioners whose qualifications are of a lower order.

The chiropractors and naturopaths may be disposed of more summarily. These individuals are to a very large extent unfamiliar with the established facts of medical science, and as healing practitioners they are therefore a menace both to the public's health and to its pocketbook. This is said notwithstanding the fact that many of the chiropractors and naturopaths now employ physical therapeutic agents which are sanctioned and used by reputable physicians.

The individuals who practice religious healing are on another basis from the above groups, in that they do not pretend to be doctors. Nevertheless, the practice of religious healing by individuals unable to diagnose disease has some disadvantages. These disadvantages become serious when the religious healer offers his ministrations as a complete substitute for medical attention and discourages resort to medical aid.

The objection to the existence of sectarians is not so much that their therapeutic methods are in themselves incorrect as that the use of these or any other therapeutic measures by individuals untrained in the medical sciences, unable to diagnose disease, and unaware of their own limitations, is unsound, dangerous, and economically wasteful. It is established beyond doubt that in some disease conditions cures may be effected through the prompt employment of the appropriate remedial measures—such as early surgical intervention for cancer and acute appendicitis, antitoxin for diphtheria, quinine for malaria, and salvarsan for syphilis. Delay in the diagnosis of these conditions and in the employment of the proper remedy may result in a more serious illness than might otherwise occur, or may even result in death. There is danger not only to the individual but also to the community. How foolish it is for a community to maintain an elaborate public health machinery to prevent the spread of certain communicable diseases, and yet permit individuals to practice who are unable to differentiate diphtheria from pneumonia or scarlet fever from measles. In experiments with sectarians, people often spend large amounts of money which they can ill afford.

There are two ways of dealing with the problem constituted by the existence of unqualified medical sectarians. One is the non-legal and the other the legal approach. The first involves striking at the cults by removing the causes which send people to them. The second involves the legal suppression of unqualified practitioners. Past experience seems to indicate that the first method, being the more fundamental, is in the long run the simpler and more effective.

Non-Legal Control.—If medical sects are to be eliminated, the root causes of their rise and existence must be attacked. The desire of some people to become sectarian or substandard medical practitioners, providing others will pay them well for their services, cannot very well be eradicated. It is the popular belief, actual or potential, in the value of sectarian theories and practices, which causes people to patronize sectarians, and if sects are to be eliminated, it is this belief which must be destroyed.

Medical science is constantly advancing; physicians are becoming more and more competent to cope with the ailments to which the human body and mind are subject. At the same time, through the agency of schools, health departments, and publications of various sorts, the lay community's stock of knowledge regarding the human body and its functioning is constantly being enlarged and more widely disseminated. From these factors it can and does result that, for each successive generation, the limits within which credulity exists and quackery can operate are being narrowed. It is perhaps only to be expected that behind the advancing current of medical science, eddies of deluded and deluding individuals, unwilling to accept scientific fact, should gather; but the audience which these individuals can reach gradually grows less. It may perhaps be homely, but it is nevertheless a fact, that the elimination of medical sects (and of various health superstitions and nostrums in general) waits in part upon the further advance of medical science, and further permeation through the ranks of the public of information about the human body and the sophisticated attitude towards the pretensions of " healers " which is consequent upon such information.

But other steps, and of a sort which may bring more immediate results, must also be taken if the sects are to be eliminated. As has been previously shown, some if not all the present-day sects flourish because their methods of treatment are useful in some conditions and because the medical profession has been slow to make use of the elements of value in these methods of treatment. Increased use by the medical profession of physical therapy and psycho-therapy will do more, perhaps, than any one other thing to eradicate sectarianism. Furthermore, whatever the medical profession may do to eliminate from its ranks poorly-trained or unworthy practitioners and to raise the general level of care given by its members, must inevitably aid in drawing patients away from the sectarians.

Legal Control.—The second way to limit unqualified sectarians lies in laws designed to regulate healing practice. Because the layman is unable to determine for himself the physician's ability and character, every state in the Union, and practically every civilized nation, has passed laws restricting the practice of medicine (*i. e.*, the prevention and treatment of disease) to qualified persons. In this country, through the instrumentality of the medical practice acts, the qualifications required of medical practitioners have been progressively raised in the past and are now almost uniformly high. For example, thirty-eight states require physicians to have had a high-school education, at least two years of college, and a four-year medical course, while several others require an additional year of internship. Nevertheless, in the United States the legislative regulation of healing practice is not accomplishing its acknowledged purpose. While it maintains high standards for doctors of medicine, quite illogically it also sanctions the existence of many thousands of altogether unqualified " doctors."

At the present time the legislation of a large majority of the states is so framed as to protect the public inadequately from incompetent sectarian practitioners. It is so framed, furthermore, as to prolong indefinitely the life of present sectarian groups of poorly-trained practitioners and to perpetuate new ones. Many states, as has been shown, license osteopaths, chiropractors, and naturopaths as limited practitioners under laws which set up a separate board of examiners for each group and prescribe qualifications lower than those which physicians must possess. Such laws are framed on the false principle that the various healing practitioners perform substantially different services and that, on this account, only such education and training should be required as are presumed necessary for the use of their especial remedial agent, be that spinal manipulation or the prescription of drugs. This principle is unsound because it loses sight of the fact that all these practitioners—whether physicians, osteopaths, or naturopaths—treat disease, and that the first requisite of one who treats disease should be the ability to recognize and differentiate the various maladies. Only when the particular malady from which the patient is suffering is determined, can the practitioner make use of that remedial agent deemed best for the condition in question.

In so far as medical sectarianism can be controlled by law, that end can probably be best achieved through the medium of " basic-science " laws. Wisconsin, Connecticut, Minnesota, Nebraska, Washington, Arkansas, and the District of Columbia now have such laws. The laws in these seven jurisdictions are of a similar pattern: each provides that all who treat disease or hold themselves out to do so must, before being licensed, demonstrate their knowledge of the so-called basic sciences. These are anatomy, physiology, pathology, and bacteriology; several states include chemistry, and one or two other states, hygiene and diagnosis. The examination in these sciences is administered by a separate, impartial board. In a majority of the states none of the board members hold a degree in, or are practitioners of, any of the healing arts. More than one-half of the members of the seven boards, taken as a whole, are university professors.

Basic-science legislation will not entirely eliminate the sectarians. Under this legislation, practitioners less trained than doctors of medicine will still be licensed. Such practitioners, however, will be trained sufficiently so that little harm to the public will result from their existence.

The legal control of unqualified practitioners through the medium of " basic-science " laws should be extended to all states in the Union. Methods of legal suppression of unqualified medical sectarians should not, however, obscure the limitations of the approach. The simplest and most effective way of eliminating sects of poorly-trained practitioners is to eliminate the reasons which cause people to patronize them.

PART VI

MEDICAL INSTITUTIONS AND COMMODITIES

CHAPTER XVII

HOSPITALS AND MEDICAL CARE

The three main items in medical care have been subsumed under the terms: practitioners, institutions, and commodities. The foregoing section of the report has presented an economic analysis of medical practitioners in the United States and the rôle which they play in the costs of medical care. The present section deals chiefly with the medical institutions in which the individual professional practitioner maintains no direct financial relationship with the patient whom he serves, although from a professional point of view very close personal relationships may exist between practitioner and patient. The amounts paid by, or on behalf of, patients for the services of medical institutions are approximately one billion dollars annually, as compared with nearly two billion dollars paid to professional medical practitioners.

INSTITUTIONS FOR MEDICAL CARE DEFINED

Several types of institutions which provide medical care exist in the United States at the present time. The classes are not always mutually exclusive, and in some cases the procedures in a medical " institution " resemble those of a medical practitioner. The following major types of institutions will however, be recognized as suitable bases for classifying the group in this volume: hospitals, clinics, public health agencies, and private laboratories.

The hospital may be defined as a place in which a patient receives medical care of such nature that it is necessary for him to utilize a bed either continuously or intermittently during the period of treatment. This definition is broad enough to include those institutions in which the patient is confined to his bed continuously and those in which the patient remains a resident of the institution even though he may be " up and about " during a portion of each day. Most hospitals have in recent years expanded their services to care for ambulatory patients who resemble in all medical aspects those treated in the offices of private practitioners. These individuals, known as out-patients, in some cases vastly exceed in number those who require the use of a bed during treatment.

It will be pointed out that hospitals provide a variety of medical services, many of which are not rendered at the bedside or are not directly connected with the patient's bed care. The distinguishing feature of a hospital, however, is the more or less continuous use of a bed by a patient, and a hospital is therefore to be distinguished (*a*) from a clinic or dispensary from which patients return to their homes after each treatment and (*b*) from institutions in which patients utilize the facilities primarily as a home and receive little or no medical care. A hospital in its technical processes serves individuals rather than groups.

Another primary type of medical institution is the public health agency, differentiated from the hospital or clinic chiefly because of its services to entire communities rather than to specific individuals. Public health activities involve such services as the registration of vital statistics, sanitation of the water and food supply, and the control of communicable diseases. The contrast between service to the individual and to the community is not a sharp one, and in many cases public health agencies actually perform specific medical services on behalf of individuals. Illustrations of service to individuals are cases where public health nurses attend patients in the home or where public health physicians inoculate against communicable diseases or actually treat sick individuals, as in public health clinics for cancer or venereal disease. In all these relationships, however, the patient is the financial beneficiary of the public health agency and not of the practitioner engaged in treatment.

Another type of medical institution of very limited scope but, nevertheless, with distinct individuality, is the private laboratory conducted by an individual or group of practitioners —the physicians and laboratory technicians who perform certain laboratory tests for other medical practitioners or for patients. The patient's financial relationship, however, is with the laboratory rather than with the individuals who make the laboratory examinations.

The hospital is the outstanding example among medical institutions, representing total personnel, capital investment, and operating costs far in excess of all other types of institutions combined. The immediately following chapters will be devoted to a discussion of the special economic problems of hospitals, clinics, and public health agencies. Other types of institutions will be discussed in the following chapters; but laboratories receive no special attention because a dearth of information precludes a detailed or systematic analysis.

THE RÔLE OF HOSPITALS IN MEDICAL CARE

In the year 1929 there were approximately 7,000 hospitals equipped to provide bed care to sick and injured persons. These institutions contained 900,000 beds and represented a capital investment of something more than three billion dollars. Their annual operating costs were two-thirds of a billion; and to these expenditures the American public adds 200 million dollars annually for the expansion of existing facilities.

The characteristic feature of the hospital is the bed for a sick patient; hence the 900,000 beds may express in a rough measure the facilities available to the American public for the bed care of the sick. In order to describe these facilities adequately it should also be added that in 1929 the 7,000 hospitals contained other equipment of extreme professional importance. In these institutions there were nearly 50,000 bassinets for the care of newborn infants whose mothers were receiving obstetrical care in the institutions. During the year 1929, approximately 700,000 children were born in American hospitals. More than 4,000 hospitals contained clinical laboratories as adjuncts for the diagnosis and treatment of disease, and 4,400 maintained X-ray apparatus for photography and treatment. In 1,800 of the institutions more or less elaborate out-patient departments were maintained for the care of patients who did not require the use of a bed. In 2,000 of the institutions there were dental chairs, and in 2,160 schools were maintained for the training of nurses.

Within the hospitals there were supported continuously 346,000 employees; of these 14,000 were physicians serving in the capacities of medical directors, resident physicians, or interns; 77,000 were graduate registered nurses working at the bedside, in the operating rooms, or in the laboratories;

80,000 were student nurses assisting in the care of patients while in training for the independent practice of their profession; approximately 6,000 were social service workers, laboratory assistants, and dietitians; approximately 169,000 were lay employees engaged in administrative work, office procedures, and skilled or unskilled manual labor. The distribution of the personnel among various institutions varies greatly according to the scope and quality of the services offered, as well as to the particular types of patients admitted for treatment.

Approximately 8 million members of the general public are admitted annually to hospitals for medical care. Most of these hospitalized persons return to the normal routine of living after their periods of treatment are terminated.

Data obtainable with respect to the years preceding and following 1931 indicate a continuous growth in hospital facilities (when measured in such terms as beds, laboratories, X-ray departments, out-patient departments), with one exception—a decrease in the number of nursing schools from 2,160 in 1929 to 1,788 in 1931. The number of employed persons in these institutions as a whole has also decreased within the last two years as a result of the financial condition of the country which has caused a reduction in the number of admissions to American hospitals and has required economies in expenditures for their maintenance.

Although the expenditures for the maintenance and expansion of hospital facilities are large—860 million dollars annually—the economic importance of hospital care arises from special features of the hospitalized illness. In the first place, each hospitalized illness is, to the paying patient, a financial emergency. It usually involves a large expenditure, not infrequently exceeding $100, and it usually entails in addition a surgeon's or physician's fee or both. In some instances private nurses also are engaged to render medical care.

Coming as it does usually without warning and frequently after other expenditures have been incurred for medical care (and in many cases during or after a period of enforced unemployment), the illness which requires hospitalization frequently represents a crushing financial burden upon the patient. The combined bills for physicians, hospitals, and special nurses in hospitalized illnesses represent each year 50 per cent of the total cost of medical care in the United States.

PROFESSIONAL-ECONOMIC NATURE OF HOSPITAL SERVICE

At one time, hospitals were hospices for the sick poor whose home conditions did not permit attention by the family or a reasonable chance of prompt recovery. Hospitals were designed for patients who were physically disabled, for those about to die, and for those who were forced to withdraw from society because of special illnesses of a chronic or incurable nature. These institutions were therefore homes rather than medical workshops and, during periods of illness, their patients received domiciliary care rather than medical treatment.

Not more than a century ago physicians began to offer their services to hospitals without charge in the hope that some hospital patients might be cured of their illnesses and enabled to return to normal life. As hospital facilities improved and diagnostic and therapeutic apparatus was installed in these institutions, physicians were permitted to treat a few of their private patients in specially prepared divisions of the institutions. It was not intended that the hospital would become a place in which physicians would carry on an extensive private practice. At the present time, however, the medical apparatus and equipment of a hospital tends to exceed in extent and quality that which is available in the private offices of physicians, and the hospital has become the only suitable place for the care of many diseases and conditions. Bedside care for a large proportion of major illness has shifted from the patient's home to the hospital, and care for a great number of conditions which do not confine the patient to bed is now furnished in the out-patient department of a hospital, or in a private clinic maintained in the hospital, instead of in the physician's office. As will appear later (Chapter XXIV), the physician's private office is now not infrequently located in a hospital building.

Under present arrangements, three separate types of medical enterprise are ordinarily carried on within the hospital—the private practice of the physician, the private practice of the nurse, and the provision of those services typically designated as "hospital care." These three activities go forward side by side in the modern public hospital. Although the hospital director controls only the service known as hospital care, he exercises an indirect influence upon all medical service performed within the institution; and conversely, physicians and nurses influence the professional practices of the hospital. Frequently only a fine line divides the service of private practitioners from those performed by and in the name of the hospital. It will be observed at a later point that this line is tending to disappear in many institutions with the increase in the proportion of physicians and nurses who are engaged as salaried employees of the institution rather than as independent private practitioners within the walls of the hospital.

It is sometimes said that hospitalization is essentially a business activity and that the administration of hospitals requires the same skill and understanding of administrative procedures as that demanded for the direction of a factory or a large commercial establishment. This point of view is both correct and incorrect. In a technical sense, hospitalization has become a business—it involves an extensive capital investment and the employment and supervision of personnel. The technical processes of administration may be as difficult in a hospital as in a factory or a retail store—in fact they may be more difficult because of the abnormal conditions of the hospital's patrons and the complexity of the professional interrelationships among the medical and nursing practitioners.

Although a hospital is similar to a business enterprise in its technical processes, it is conducted in a spirit of social or public service prompted by the importance and need of serving individuals and the community. The product of the hospital is not to be withheld merely because the patient cannot pay the fees, provided of course that it is neither possible nor convenient for the patient to have his expenses paid for him in some other equally satisfactory institution in the community, such as a city or county hospital. This attitude of the hospital is reflected in its general policy of accepting emergency cases without investigating the patient's financial status and of using a "sliding scale" (downward) in the establishment of fees for those unable to pay the fixed rates.

The fact that hospitalization involves important administrative and economic problems which call for knowledge and skill in business administration and a keen understanding of supply and demand for medical services in our present economic order and that hospitalization is nevertheless primarily a social service to be rendered according to the needs of individuals rather than according to their ability to pay are of extreme significance in the discussion of appropriate methods of financing hospital care; for, if hospital service be regarded primarily as a responsibility of the general public, the financing of hospital service is also primarily a responsibility of the general public. Patients can be relied upon only to a limited extent to pay the costs of their own hospitalization—the limits being dictated by the patient's financial status at the time of the illness, by the probable costs of the care during time of treatment, and by the effects of these costs upon his financial circumstance. In any event, the burden must be spread equitably over the entire public by permittting or requiring all members of the public to contribute toward the cost of the service, either on an equal basis which gives each member an opportunity to participate in its support, or on such a plan combined with a definite recognition of each citizen's ability to pay as through a property or income tax levied by the local government.

The laws of competition work in the distribution of hospital service to paying patients in the same manner as they do in the sale of ordinary economic commodities. Consequently one finds that in any given community there is a standard price for identical professional services of the hospital. These prices are gauged more or less by the cost of production. Slight variations may often arise from superficial phases of the hospital service, such as the reputation which it may enjoy as a fashionable institution, but a $10 or $15 hospital room is never charged to the well-to-do patient at the rate of $75 or $100 per day. Generally speaking, differences in the prices of hospital service represent actual differences in the type or amount of service rendered, as evidenced by such features as privacy, complexity of equipment, number of diagnostic or treatment procedures, convenience of location, and number and classes of personnel involved.

MEDICAL SOCIAL SERVICE

The adjustment of the sick or convalescent patient to the community in which he will resume the activities of a normal and healthy person represents a social problem which is as much a part of specialized medical service as is an X-ray diagnosis or the surgical removal of diseased tissue.

Within the last two decades there has been a gradual development of medical social service as a necessary and special function of medical care, particularly in hospitals which care for patients with acute diseases and in clinics which serve very poor patients who require ambulatory care. Consequently, the scope and nature of medical social service may rightly be discussed as a part of the service of hospitals and clinics.

Extent of Medical Social Service.—There are known to be 554 departments in hospitals and dispensaries of the United States—exclusive of the Army and Navy hospitals and of hospitals for mental diseases—usually called social service departments, but in some instances designated as departments of social work, or departments of social service and public health nursing.* More than one-half of the social service departments are in institutions organized as independent hospitals. Approximately 20 per cent are in church hospitals, and an almost equal number in institutions under the auspices of state and local governments. Social service departments tend to be concentrated in the larger cities, and in the larger general hospitals; they are relatively unknown in rural areas. Approximately 2,000 medical social workers are associated with hospitals and clinics of the country, and 1,700 of these were members of the American Association of Hospital Social Workers in 1931.

The social worker serves two general functions; first, the study and analysis of the patient's economic and social environment in order to determine such factors as ability to pay for medical care; second, aid and participation in the adjustment of the patient to his environment during and after medical service, in order that medical care may be most effective from the standpoint of the physician, the patient, and the patient's family. Many hospital directors now believe that stabilized hospital revenues as well as equitable distributions of the financial burden of medical care among members of the public depend largely upon the services of well-trained social workers. Outside the hospital, social workers have been particularly active in public health work, especially in the phases of public health nursing concerned with infants and preschool children, with patients suffering from tuberculosis, heart disease, and diabetes, and with physically handicapped persons and those who require long periods of convalescence.

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* All numerical data describing the present scope of medical social service are taken from *Hospitals and Child Health,* Publication I-C of the White House Conference on Child Health and Protection (The Century Co., New York, 1932).

Case records of medical social service have taken their place with the records of other institutional services in the treatment and follow-up of hospital and clinic patients. The social data in the record usually include family background and history and housing and home conditions; details of personal history which relate to education, work, and recreation; financial data concerning income, savings, and family responsibilities.

The financial support of social service departments varies. Many are financed entirely from the general hospital revenue; others are made possible only through special subsidy from auxiliary committees or community chests. Some are maintained through voluntary contributions specifically designated for this service, and a large number rely in part or in whole upon the services of volunteer workers.

Of the 28 schools which now belong to the Association for Professional Social Work, 10 offer training for medical social work, and in several others plans for such training are in progress. In most of the schools, a baccalaureate degree is required for admission, and the student is a candidate for the degree of Master of Arts or Master of Science.

The special committee on medical social service in the White House Conference on Child Health and Protection made specific recommendations toward the expansion of medical social service, and pointed out in their report * that medical social service should be closely allied with the instruction and training of physicians and nurses and closely interrelated with the general problems of hospital and clinic administration.

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* *Hospitals and Child Health, op. cit.*

CHAPTER XVIII

HOSPITALS: CAPACITY, CAPITAL INVESTMENT, AND PERSONNEL

The hospital facilities of the United States may be described in terms of the number of institutions, their bed capacity, or the amount of their capital investment. The totals for the United States may be subdivided according to the types of medical service available in the various institutions, or the types of ownership or control. Tables 53 and 54 and Fig. 43 show the hospitals, hospital beds, and capital investment for the "registered" hospitals in 1928.* These data, obtained in connection with a study of the capital investment in hospitals, and assembled for the purpose of presenting the interrelationships among types of medical service and types of control, are representative of conditions prevailing in 1928, 1929, and 1930 and, with supplementary data, are substantially correct for 1931 and 1932.

HOSPITAL FACILITIES BY TYPE OF SERVICE

"General" hospitals included 66 per cent, or practically two-thirds, of the number of institutions registered in 1928, approximately 42 per cent of the beds, and 60 per cent of the capital investment. In that year more than 4,500 hospitals were available for the care of general medical and surgical cases, with an average bed capacity of 82 per institution, and an average capital investment of $5,000 per bed.

These data for general hospitals offer rather sharp contrast to those for hospitals for nervous and mental cases. Although there were registered in 1928 only 553 hospitals for nervous and mental cases, their combined bed capacity exceeded that for general hospitals and represented 44 per cent of all the registered bed capacity at that time. The capital investment in hospitals for nervous and mental diseases, however, represented only 27 per cent of the total because of the relatively low average investment per bed (about $2,000). The number of beds per hospital for nervous and mental cases—approximately 712 per institution—was almost ten times as great as that for general hospitals. Not all hospitals for mental patients

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* Registered by the Council on Medical Education and Hospitals of the American Medical Association.

TABLE 53

HOSPITALS AND HOSPITAL BEDS (EXCLUDING BASSINETS) REGISTERED BY THE AMERICAN MEDICAL ASSOCIATION, 1928, CLASSIFIED BY CONTROL AND TYPE OF SERVICE

Control	General(a)		Nervous and Mental(b)		Tuberculosis		Special(c)		Institutional		Total	
	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds
Federal	232	33,949	20	15,472	27	8,348	4	510	11	3,486	294	61,765
State	51	13,992	223	329,397	60	14,453	14	1,783	247	10,134	595	369,759
County	221	24,563	53	19,513	154	15,023	15	1,362	46	2,770	489	63,231
City	235	37,587	9	11,567	27	6,857	85	8,362	16	753	372	65,126
City and county	33	4,946	2	73	14	1,612	9	318	5	604	63	7,553
Total government	772	115,037	307	376,022	282	46,293	127	12,335	325	17,747	1,813	567,434
Independent	1,014	94,700	49	6,978	73	6,559	222	16,755	103	3,067	1,461	128,059
Church	841	100,342	20	4,123	24	2,872	95	5,631	76	1,645	1,056	114,613
Fraternal	34	2,365	...	......	6	657	16	938	31	1,338	87	5,298
Total voluntary non-profit associations	1,889	197,407	69	11,101	103	10,088	333	23,324	210	6,050	2,604	247,970
Individual and partnership	1,272	27,972	131	4,064	82	2,818	213	4,479	...	......	1,698	39,333
Incorporated	448	23,150	46	2,550	40	2,800	46	2,650	...	......	580	31,150
Industrial	157	7,047	...	......	...	......	...	......	...	......	157	7,047
Total proprietary	1,877	58,169	177	6,614	122	5,618	259	7,129	...	......	2,435	77,530
Grand total	4,538	370,613	553	393,737	507	61,999	719	42,788	535	23,797	6,852	892,934

(a) "General" includes industrial, surgical, and emergency.

(b) "Nervous and Mental" includes feeble-minded and epileptic.

(c) "Special" includes maternity; convalescent and rest; isolation; children's; eye, ear, nose, and throat; orthopedic; skin and cancer; drug and alcohol; chronic and incurables; trachoma; venereal; and others.

are large, for the average of 712 is midway between the average number of beds in the very large institutions under state and federal auspices with 1,200 or more beds each and the rather small institutions under private auspices, many of which have 20 beds or less. The average is 84 beds under non-government control for all hospitals for nervous and mental diseases.

TABLE 54

CAPITAL INVESTMENT (IN THOUSANDS OF DOLLARS) AS OF DECEMBER 31, 1928, IN 6,852 HOSPITALS REGISTERED BY THE AMERICAN MEDICAL ASSOCIATION(a)

Control	General	Nervous and Mental	Tuberculosis	Special	Institutional	Total
Federal	$122,841	$38,595	$28,034	$1,530	$8,715	$199,715
State	51,664	660,401	49,012	7,056	25,335	793,468
County	86,915	44,270	43,890	5,260	6,925	187,260
City	136,774	23,486	20,517	28,430	1,882	211,089
City and county	17,441	182	4,726	1,149	1,510	25,008
Total government	$415,635	$766,934	$146,179	$43,425	$44,367	$1,416,540
Independent	$585,019	$20,934	$20,457	$72,656	$7,668	$706,734
Church	627,498	12,301	9,275	23,951	4,112	677,137
Fraternal	11,821	......	1,967	3,411	3,345	20,544
Total voluntary, non-profit associations	$1,224,338	$33,235	$31,699	$100,018	$15,125	$1,404,415
Individual and partnership	$81,642	$12,192	$7,647	$14,336	.....	$115,817
Incorporated	102,027	7,650	8,850	9,700	.....	128,227
Industrial	25,124	......	......	......	.....	25,124
Total proprietary	$208,793	$19,842	$16,497	$24,036	.....	$269,168
Grand total	$1,848,766	$820,011	$194,375	$167,479	$59,492	$3,090,123

(a) From *The Public's Investment in Hospitals*, by C. Rufus Rorem (University of Chicago Press, 1930).

From the point of view of the service they render, tuberculosis hospitals are an important group in the total. They do not, however, represent a large proportion of the total number of hospital beds or of the total capital investment. According to the data for 1928 in the American Medical Association Register, tuberculosis institutions represented 7 per cent of the hospitals, contained 7 per cent of the beds, and were responsible for approximately 6 per cent of the capital investment. The average bed capacity in tuberculosis hospitals was

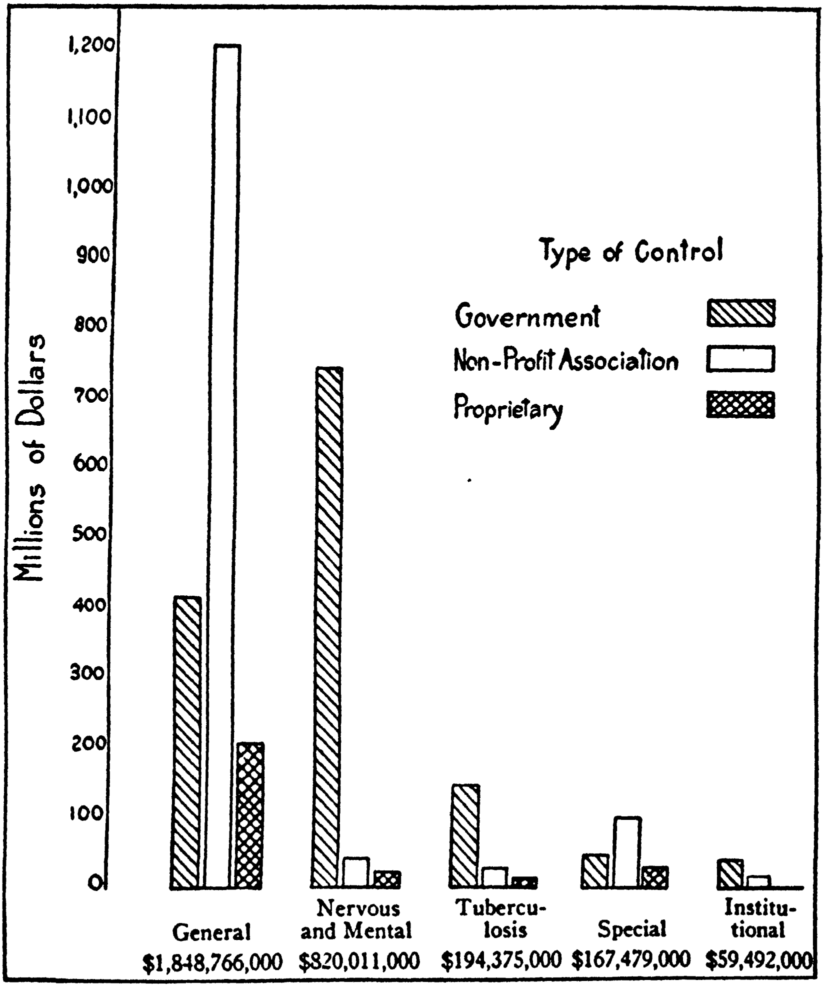

FIG. 43. CAPITAL INVESTMENT IN 6,852 HOSPITALS "REGISTERED" IN 1928

somewhat greater than in general institutions, but much smaller, on the average, than in nervous and mental hospitals. Here again the average of 122 is not typical of the ordinary tuberculosis institution, for there are many very small institutions and a comparatively small number of very large ones.

Hospitals for special types of acute diseases and conditions, as well as those here classified as institutional, represent only a small proportion of the total number of beds and of the capital investment in hospitals in the United States. The average size of special hospitals is 60 beds and the average for the fairly large number of institutional hospitals is 44 beds.

Two types of hospitals (general and special) are designed for the care of patients suffering from acute diseases and conditions which, as a rule, necessitate relatively short periods of hospitalization. These "short-stay" hospitals represent three-fourths of the total number of hospitals, slightly less than one-half the number of beds, and two-thirds of the total capital investment. Patients in the three remaining types of hospitals (nervous and mental, tuberculosis, and institutional) as a rule need hospitalization for long periods of time. These "long-stay" hospitals represent one-fourth of the total number of hospitals, slightly more than one-half the beds, and 35 per cent of the capital investment. It is apparent from this comparison that hospitals for acute diseases and conditions are many in number but relatively small in capacity, with large proportionate capital investment per bed. "Long-stay" institutions, though few in number, are widely scattered throughout the United States at points where large numbers of patients can be accommodated. The type of medical service offered in these institutions requires proportionately less capital investment in plant and equipment: whereas the average investment per bed in hospitals for acute conditions is nearly $5,000, the average investment per bed in "long-stay" institutions is less than $3,000.

HOSPITAL FACILITIES BY TYPE OF CONTROL

Three types of agencies control the operation of hospital service in the United States: (1) government units (local, state, or federal); (2) voluntary non-profit associations (independent, church, and fraternal organizations); and (3) proprietary associations (individual and partnership, incorporated, and industrial). The distribution of hospitals, beds, and capital investment by type of control is indicative of the service which these three agencies render.

Voluntary non-profit associations control 38 per cent of the hospitals, with the proprietary institutions following closely with 36 per cent. The government hospitals included only 26 per cent of the institutions in the United States in 1928. When attention is turned to the number of beds, different proportions are revealed. The government hospitals contain 63 per cent of the total number of beds, non-profit institutions contain 28 per cent, and the proprietary hospitals follow with 9 per cent. These proportions are the direct result of the average size of these hospitals when measured in terms of number of beds. Government hospitals contained on the average 313 beds per hospital, non-profit institutions 95 beds, and proprietary hospitals 32 beds.

Government units control most of the capital devoted to services requiring long periods of hospitalization—96 per cent of the bed capacity in nervous and mental hospitals and 75 per cent of that devoted to the care of the tuberculous. Voluntary non-profit associations have provided most of the capital for the hospitals serving acute cases: they have supplied two-thirds of the investment in general hospitals and approximately the same proportion of that in special hospitals. Independent hospital associations and churches share about equally in the provision of hospital capital, and conversely each group has allotted more than 90 per cent of its capital to general and special institutions, accepting a limited responsibility for the care of nervous and mental and tuberculosis cases. A consideration of the average investment per bed indicates that, although the average for the country in 1928 was estimated to be approximately $3,500, this figure was typical of proprietary institutions only. Government hospitals were, on the whole, less expensive to construct because of the predominance of institutions for long-stay treatment. Non-profit hospitals, on the other hand, were as a rule much more expensive with an average capital investment of nearly $5,700 per bed.

CONCENTRATION OF FACILITIES IN LARGE INSTITUTIONS

Although there were nearly 7,000 hospitals in the United States in 1928, a very substantial proportion of the hospital facilities were concentrated in a relatively small number of large institutions, as may be observed from Table 55. Nearly 60 per cent of the hospitals in the United States contained 50 beds or less in 1928, yet this large number of institutions contained only 11 per cent of the hospital bed capacity. Only 2.7 per cent of the hospitals contained 1,000 beds or more, yet these few institutions (185 in number) contained nearly 40 per cent of the registered bed capacity. Seventy-seven per cent of the hospitals contained 100 beds or less, but these hospitals represented only 22 per cent of the bed capacity and 23 per cent of the capital investment. On the other hand, the hospitals which contained more than 100 beds (23 per cent of the total number of hospitals) included 78 per cent of the total bed capacity and accounted for 77 per cent of the total capital investment in hospitals in 1928.

TABLE 55

TOTAL HOSPITALS, BEDS, AND CAPITAL INVESTMENT CLASSIFIED ACCORDING TO SIZE OF HOSPITALS

Hospitals "Registered" by the American Medical Association in 1928

Size of Hospital (Bed Capacity)	Number of Hospitals	Number of Beds	Capital Investment (In Thousands of Dollars)	Per Cent		
				Hospitals	Beds	Investment
All sizes	6,852	892,934	$3,090,123	100.0	100.0	100.0
25 beds or less	2,453	38,918	104,208	35.8	4.4	3.4
26 to 50 beds	1,585	61,222	200,321	23.1	6.9	6.4
51 to 100 beds	1,247	93,813	395,554	18.2	10.5	12.8
101 to 200 beds	772	112,179	549,407	11.3	12.6	17.8
201 to 300 beds	306	76,350	401,783	4.4	8.5	13.0
301 to 500 beds	189	72,556	356,709	2.8	8.1	11.5
501 to 1,000 beds	115	82,587	317,282	1.7	9.2	10.3
Over 1,000 beds	185	355,309	764,859	2.7	39.8	24.8

The concentration of hospitals according to the average size of the hospital is also reflected in the geographical concentration of hospital facilities and the tendency toward concentration of hospitals for acute diseases and conditions in urban areas. Hospitals for nervous and mental and tuberculosis cases may be located at any of several places within a state or the United States, depending upon factors of climate and general accessibility. Hospitals for acute diseases and conditions are definitely concentrated to serve members of the immediately adjacent population. However, all types of hospitals, bed capacities, and capital investments are very definitely concentrated in the more populous states of the North and Middle Atlantic sections of the country, with relatively less concentration of hospitals and facilities in the less populous and less prosperous parts of the United States.* From the standpoint of average investment per person, the North and Middle Atlantic States lead with an average of $25; the South and South Atlantic States show the lowest average, $6 per capita; and the average for the entire country is $16 per person. (See Fig. 44).

The large general hospitals under state and local government auspices are more or less evenly distributed through the five major sections of the United States. The non-government general hospitals however are concentrated almost exclusively in the North and Middle Atlantic States which contain the majority of the large cities of the country, with the second degree of concentration in the Central West which contains such cities as Chicago, Detroit, Milwaukee, and the large cities of Ohio. The degree of concentration in the North and Middle Atlantic area is greatest for those institutions with 300 beds or more. Of 69 general hospitals with 300 to 500 beds, more than one-half are in the North and Middle Atlantic States, and of the 20 institutions registered as having more than 500 beds, 14 were in the North and Middle Atlantic States and the other six in the Central West. A few states contain no hospitals of more than 100 beds and others contain a relatively large number. New York, for example, had 114 such hospitals, 95 of which were under non-government auspices; Pennsylvania contained 82, of which 76 were conducted by non-government agencies. Fourteen states reported no non-government hospitals with more than 200 beds in 1928. Most of these states were in the South and South Atlantic regions and in the Far West.

UTILIZATION OF HOSPITAL FACILITIES

The hospitals of the United States have been occupied to approximately 79 per cent of their capacity during the past

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* *Cf. The Public's Investment in Hospitals*, by C. Rufus Rorem (University of Chicago Press, 1931), p. 58.

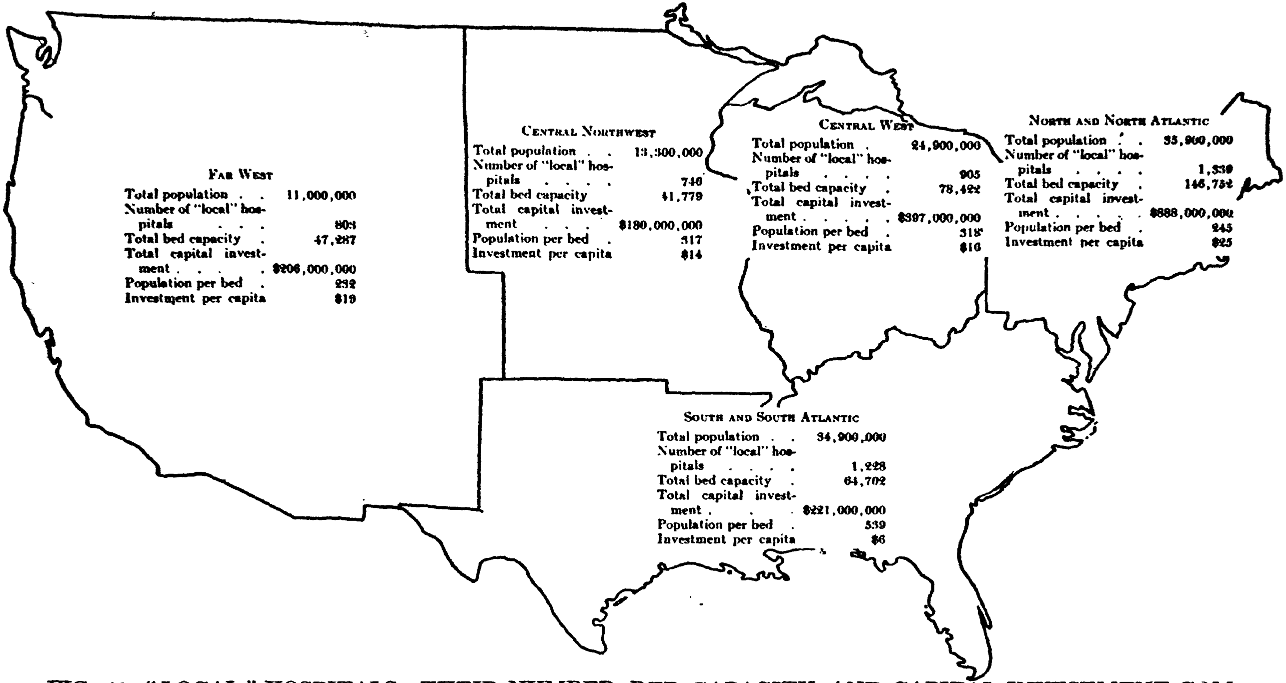
Far West
Total population . . 11,000,000
Number of "local" hospitals . . . 803
Total bed capacity . 47,287
Total capital investment $206,000,000
Population per bed . 232
Investment per capita $19
Central Northwest
Total population . . 13,300,000
Number of "local" hospitals 740
Total bed capacity 41,779
Total capital investment . . . $180,000,000
Population per bed . 317
Investment per capita $14
Central West
Total population . 24,900,000
Number of "local" hospitals 905
Total bed capacity . 78,422
Total capital investment $397,000,000
Population per bed . 318
Investment per capita $16
North and North Atlantic
Total population . . 35,900,000
Number of "local" hospitals 1,339
Total bed capacity . 146,752
Total capital investment $888,000,000
Population per bed . 245
Investment per capita $25
South and South Atlantic
Total population . . 34,909,000
Number of "local" hospitals 1,228
Total bed capacity . 64,702
Total capital investment . . . $221,000,000
Population per bed . 539
Investment per capita $6

FIG. 44. "LOCAL" HOSPITALS: THEIR NUMBER, BED CAPACITY, AND CAPITAL INVESTMENT COMPARED AS TO POPULATION, BY GEOGRAPHICAL DIVISIONS OF THE UNITED STATES

"Local" hospitals include all general and special hospitals registered by the American Medical Association in 1928. Federal hospitals and all nervous and mental, tuberculosis, and institutional hospitals are excluded. From *The Public's Investment in Hospitals*, *op. cit.*, p. 53.

five years,* and evidence for former periods indicates that this ratio has been, on the whole, typical of previous years. This proportion of occupancy, however, is not uniform throughout the institutions of the country.

Government institutions are usually occupied to a high proportion of their capacity, inasmuch as tax-supported institutions are built and constructed to meet existing needs and are as a rule filled to capacity almost immediately upon completion. During the years 1929, 1930, 1931, registered hospital bed capacity in government hospitals increased from 583,000 to 642,000. During this time 89 per cent of the beds were kept continuously occupied, and some institutions admitted average numbers of patients in excess of the rated bed capacities of the institutions. When it is recalled that a substantial proportion of the government institutions cared for acute medical and surgical cases, this high average of 89 per cent may be regarded as sufficient to guarantee complete and adequate utilization of the existing facilities, and to justify that expansion from year to year which the registered bed capacity reveals.

TABLE 56

BED CAPACITY AND PERCENTAGE OF OCCUPANCY IN HOSPITALS REGISTERED BY THE AMERICAN MEDICAL ASSOCIATION, ACCORDING TO TYPE OF CONTROL, FOR FIVE SUCCESSIVE YEARS

Year	Government Control		Non-Government Control	
	Bed Capacity	Percentage of Occupancy	Bed Capacity	Percentage of Occupancy
1927	545,169	84	308,149	65
1928	567,434	..	325,500	..
1929	582,537	88	324,596	64
1930	619,726	89	336,143	63
1931	641,524	89	332,591	62

Data regarding the percentage of occupancy for non-government institutions indicate that in the years 1927 and 1929—when bed capacity was materially increasing—the average percentage of occupancy remained at approximately 65 per cent for all non-government institutions (see Table 56). Since

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* "Percentage of Occupancy in American Hospitals," *Journal of the American Medical Association*, June 11, 1932, Vol. 98, p. 2060.

1929 there has been a small but definite reduction in the occupancy in non-government hospitals, from 64 per cent in 1929 to 62 per cent in 1931, even though the growth of bed capacity has almost entirely ceased in these hospitals during this time. The total average number of patients has increased from year to year during the past five-year period, but the increased number of patient-days of service has occurred almost exclusively in government institutions.

During the calendar year 1931 and during the two previous years, the hospital beds of the United States were occupied to 80 per cent of their registered capacity, but the rate was 95 per cent for nervous and mental hospitals and 65 per cent for general hospitals (see Table 57). The high percentage of occupancy in hospitals for nervous and mental patients is the result of a relatively small number of patients in the small non-government hospitals of this type and an almost universal overcrowding of the large state institutions for nervous and mental cases. The average of 65 per cent which obtained in general hospitals in the year 1930 is the result of rather wide variations in general hospitals of different sizes and types of control.

TABLE 57

BED CAPACITY AND PERCENTAGE OF OCCUPANCY IN GENERAL AND IN NERVOUS AND MENTAL HOSPITALS REGISTERED BY THE AMERICAN MEDICAL ASSOCIATION FOR FIVE SUCCESSIVE YEARS

Year	Type of Service			
	General		Nervous and Mental	
	Bed Capacity	Percentage of Occupancy	Bed Capacity	Percentage of Occupancy
1927	345,364	66	373,364	93
1928	363,337	..	394,364	..
1929	357,034	65	414,386	95
1930	371,609	65	437,919	95
1931	384,333	65	451,245	95

The average occupancy for general hospitals does not reveal the wide variations among institutions of different sizes and control. A special tabulation of the general hospitals in 15 representative states (Table 58 and Figs. 45 and 46) reveals several interesting and distinct tendencies. In the first place, government hospitals have been more fully occupied than those under non-government control. In this tabulation are included 1,802 hospitals which represent about 45 per cent of the general hospitals and bed capacity in the country and an average occupancy of 66 per cent. For the 86 federal hospitals in the tabulation the average occupancy is 68 per cent; for the 238 state and local government institutions, 78 per cent; and for the 1,478 general hospitals under non-government auspices, 61 per cent.

TABLE 58

NUMBER OF HOSPITALS, BEDS, AND AVERAGE PATIENTS AND PERCENTAGE OF OCCUPANCY

In "Registered" General Hospitals in Fifteen States(a), by Type of Control and Size of Hospital, 1931(b)

Control and Size	Number of Hospitals	Number of Beds	Average Patients	Percentage of Occupancy
Federal				
100 beds or less	59	2,345	1,085	46.3
101 beds and more	27	14,981	10,652	71.1
Total	86	17,326	11,737	67.7
State and local government				
25 beds or less	61	1,083	524	48.4
26– 50 beds	58	2,177	1,168	53.7
51–100 beds	43	3,045	1,805	59.3
101–300 beds	45	8,038	6,281	78.1
301 beds and more	31	29,975	24,727	82.5
Total	238	44,318	34,505	77.9
Non-government				
25 beds or less	473	7,526	3,459	46.0
26– 50 beds	322	12,173	6,151	50.5
51–100 beds	323	24,686	14,502	58.7
101–300 beds	309	53,090	33,682	63.4
301 beds and more	51	21,436	14,553	67.9
Total	1,478	118,911	72,347	60.8
Grand total (15 states)	1,802	180,555	118,589	65.7
Total registered general hospitals in the United States	4,309	384,333	247,560	64.4

(a) New Hampshire, New Jersey, New York, Mississippi, North Carolina, Illinois, Michigan, Ohio, Iowa, Kansas, South Dakota, Arizona, California, Colorado, and Wyoming.

(b) Data compiled from the *Journal of the American Medical Association*, June 11, 1932, Vol. 98, p. 2063–2141. Figures exclude all hospitals not reporting average number of patients to the Council on Medical Education and Hospitals of the American Medical Association.

The larger hospitals tend to be more fully occupied than the small ones. Among the state and local government institutions, those with 25 beds or less report 48 per cent occupancy, in contrast to 83 per cent for hospitals with more than 300 beds. Similarly, the non-government hospitals with 25 beds or less show only 46 per cent occupancy in 1931, compared with 68 per cent for institutions with more than 300 beds.

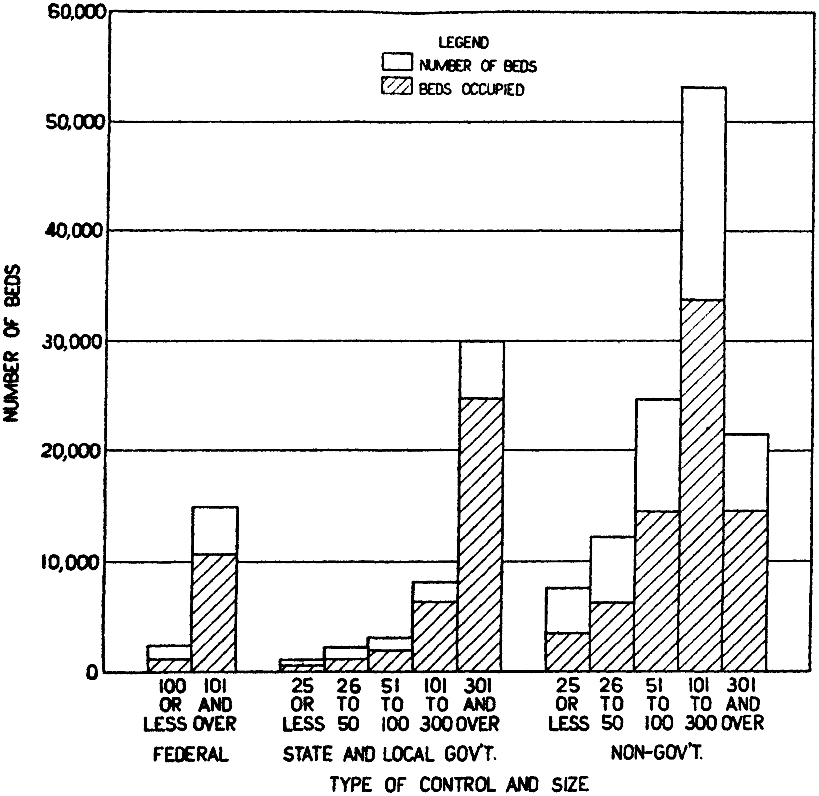

FIG. 45. NUMBER OF BEDS AND AVERAGE NUMBER OF PATIENTS IN "REGISTERED" GENERAL HOSPITALS IN FIFTEEN STATES, BY TYPE OF CONTROL AND SIZE OF HOSPITAL, 1931

Metropolitan hospitals and those in industrial states have maintained higher percentages of occupancy than those in smaller cities or agricultural states, particularly those under non-government auspices. Non-government general hospitals in the State of New York report an average occupancy of 68 per cent; New Jersey is second with 67 per cent. Mississippi, on the other hand, reports for 58 non-government hospitals only 35 per cent occupancy in 1931. For 16 Wyoming hospitals the ratio is 40 per cent. The majority of vacant beds are in large hospitals in large cities and industrial states, for the reason that they contain most of the bed capacity.

The percentage of bed occupancy is not the only criterion of the utilization of hospital plant and equipment. It is equally

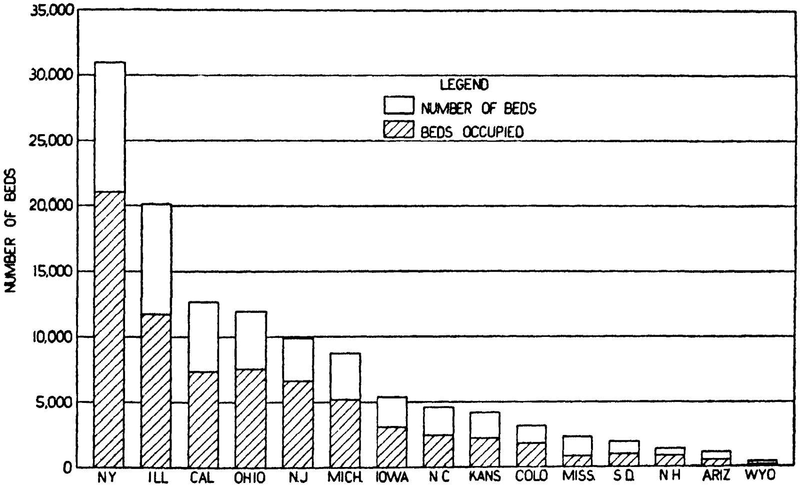

FIG. 46 NUMBER OF BEDS AND AVERAGE NUMBER OF PATIENTS IN "REGISTERED" GENERAL NON-GOVERNMENT HOSPITALS IN FIFTEEN STATES, 1931

important to utilize the scientific apparatus and professional personnel. Small rural hospitals often serve as medical centers for local practitioners in the care of ambulatory cases. An average occupancy of 50 per cent in a single small hospital of a rural community may present less of a social problem than an average occupancy of 65 per cent in a city where several institutions contain similar personnel and facilities.

Superintendents realize that hospital operating costs do not increase proportionately with admissions and that genuine economies are achieved when occupancy exceeds a certain proportion of capacity. Moreover, increased occupancy provides additional revenue to a hospital with the possibility of ultimately lowered fees to patients. Increased utilization of beds and scientific equipment means increased utilization of the public's investment in hospitals and an extension of the benefit to the people.

It has been estimated that standards of good medical care require a total of 1,158 hospital beds per 100,000 persons in the United States if all members of the population are to receive hospital care for the diseases and conditions which are most suitably treated in hospitals. This estimate assumes an average occupancy of 80 per cent of capacity.* In Table 59 are shown the number of hospital beds in 1930 and the estimated need for hospital accommodations per 100,000 of the population for the United States as a whole. From the table it appears that there is a greater deficiency in the supply of beds in hospitals for mental disease and in tuberculosis sanatoria than in general hospitals when the number of beds available is compared with the estimates of the true needs.

TABLE 59

HOSPITAL BEDS AVAILABLE AND ESTIMATED AS REQUIRED IN THE UNITED STATES IN 1930

Type of Hospital	Per 100,000 Population		For United States	
	Number in 1930(a)	Estimated Number Needed	Number in 1930	Estimated Number Needed
General(b)	328	462(c)	452,010	566,833(c)
Mental	350	558(d)	437,919	685,740(d)
Tuberculosis	52	138(d)	65,940	169,427(d)
Total	730	1,158	955,869	1,422,000

(a) Compiled from the American Medical Association Hospital Register, 1931.
(b) Includes special hospitals.
(c) Assuming an occupancy of 300 days a year.
(d) Assuming an occupancy of 340 days a year.

TRENDS IN HOSPITAL CONSTRUCTION

During the past 20 years, there has been a rapid growth in hospitals and hospital facilities, when measured in terms of bed capacity. Hospital bed capacity has more than doubled during this period; the average increase per year has been approximately 20,000 beds. Most of the increase, however, has been accomplished by the enlargement of existing hospitals rather than by the establishment of new ones; since 1927 the number of hospitals in the United States has remained practically constant. Of the institutions in existence in 1928 only one-half had been founded before 1910, yet these hospitals contained more than three-fourths of the hospital beds in the United States.

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* See Publication No. 22, listed at the end of this volume.

The rate of founding new hospitals increased materially up to the year 1925, but since that time new institutions have been registered at a decreasing rate and in most communities they have sufficed merely to replace hospitals which have merged their administrative and financial activities with those of others already in existence.

Not only has hospital service expanded through the enlargement of existing hospitals, but much of the new construction has been concerned with the improvement of facilities as well as with expansion. The development of hospital plant and equipment has thus been more intensive than extensive. Some institutions have established out-patient departments; others have purchased modern diagnostic and therapeutic equipment; and still others have improved the facilities for medical and nursing education and research.

Expansion of hospital functions to include diagnostic and therapeutic service for out-patients as well as bedside care is in part responsible for the recent improvement of hospital plant and equipment. Frame buildings which might have sufficed when a hospital was small and offered a restricted type of service, became inadequate when the program was expanded. These factors and the increase in construction cost in the years between 1910 and 1930, explain the tremendous growth in capital investment in hospitals in this period. When expressed in terms of investment per bed, the average (even for the same institutions) has in some areas nearly doubled during the two decades between 1910 and 1930. For example, in Pennsylvania it was found that for a particular group of hospitals there was an average increase of $1,200 per bed during the four-year period 1923 to 1927. In New York City a group of 13 general hospitals showed an increase from $5,200 per bed to $8,000 per bed from 1912 to 1927, without making any adjustment for the replacement cost of facilities existing prior to 1912.

During the period 1928 to 1931 most of the growth in hospital bed capacity and facilities, and consequently in hospital capital investment, has taken place in hospitals for nervous and mental diseases and in hospitals for acute conditions, operated under government auspices. This may be observed from the growth in number of hospital beds as shown in the tables previously presented which classify the bed capacity according to type of control and type of service.

Attention has frequently been called to the fact that more extensive facilities are needed in hospitals especially designed as rest homes or institutions for the care of convalescents.* Inasmuch as the service rendered in convalescent institutions requires less capital investment per bed than that of general hospitals, economies might be achieved through the expansion of facilities for convalescent care. However, until the beds in hospitals for acute conditions are filled to capacity, there seems to be no pressing need for further construction of hospitals for convalescence and rest. The few convalescent hospitals registered by the American Medical Association in 1928 are included in Tables 53 and 54 in the category of " special " hospitals.

HOSPITAL PERSONNEL

In Chapter XVII it was stated that the personnel of American hospitals included approximately 346,000 full-time employees, of whom approximately 14,000 were physicians; 6,000 were social workers and laboratory and X-ray technicians; 77,000 were registered nurses; 80,000 were student nurses, and 169,000 were lay employees of various types including executives, clerical staff, ward helpers, orderlies, and persons engaged in housekeeping, laundry, and building maintenance.

The employees of the hospitals in the United States are not equally divided among the various institutions. The ratio of employees to patients varies greatly according to the type of service rendered. The total figures are based upon numerous sources of data including a special study of hospital personnel in institutions of different bed capacities and size of community, and is based upon the following ratios of patients to employees in effect for the years 1929 and 1930:

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* See Miscellaneous Contributions No. 1, in the list of Committee Publications at the end of this volume, and the White House Conference Publication, *Hospitals and Child Health* (The Century Co., New York, 1932), p. 67 *ff*.

Type of Hospital	Number of Patients per Employee
General and special hospitals	1
Hospitals for nervous and mental cases	6
Tuberculosis hospitals	3

Using these ratios for the basis of a general estimate, one arrives at approximately the following figures for total personnel: general and special hospitals, 265,000; hospitals for nervous and mental diseases, 66,000; tuberculosis hospitals, 15,000.

These estimates, based upon existing data, indicate that there are more than one-third of a million people employed in hospitals of the country. The total is considerably lower than one previously submitted in Committee publications which was based almost entirely upon the ratios of employees to patients which obtained in hospitals for acute medical and surgical diseases.*

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* The following sources of information were utilized in arriving at the estimate of personnel in American hospitals: "Some Observations on the Ratio of Nurses to Patients," Cristiane Reimann, *Nosokomeion,* Supplementary Number, 1931; *Nursing and Nursing Education,* Josephine Goldmark, 1919; "Supply and Distribution of Nurses," A. S. Gilman, *American Journal of Nursing,* Vol. XXVI, No. 1; "A Study of Hospital Services and Costs in the United States," A. W. Buck, *Modern Hospital Year Book,* 1928; Special tabulations and *Rating Form for Appraising Tuberculosis Sanatoria,* National Tuberculosis Association, 1932; *Mental Patients in State Hospitals,* 1923 and 1928, Bureau of the Census; *Annual Reports* of the Commissioners of Public Health, Welfare and Mental Diseases for the various states, including Massachusetts, New York, North Carolina, Kentucky, Ohio, Illinois, Iowa, North Dakota, Arkansas, California; *Annual Reports of the Duke Endowment, Hospital Section,* 1925-1931, Charlotte, North Carolina; published reports of the United Hospital Fund, New York City; the Committee on Social Statistics, United States Children's Bureau; the United States Veterans' Administration; the United States Public Health Service; the United States Department of the Interior.

CHAPTER XIX

HOSPITAL INCOME AND COSTS

THE ANNUAL BILL FOR HOSPITAL SERVICE

The annual bill for hospital services to the American people is equal to the total costs of hospital maintenance, replacement, and expansion. The total varies from year to year, but an estimate for the calendar year 1930 is presented in Table 60.

TABLE 60

ESTIMATED ANNUAL OPERATING COSTS, PATIENT-DAYS, AND ADMISSIONS IN GENERAL AND SPECIAL, MENTAL, AND TUBERCULOSIS HOSPITALS IN THE UNITED STATES, 1930

Type of Hospital	Bed Capacity	Average Number of Occupied Beds	Number of Annual Admissions	Total Costs (In Thousands of Dollars)
General and special....	404,000	263,000	7,694,800	$434,315
Nervous and mental...	432,000	409,000	124,800	165,520
Tuberculosis..........	64,000	54,000	122,200	56,010
Total................	900,000(a)	726,000(b)	7,941,800(c)	$655,845(d)

(a) The total and its subdivisions apply to the bed capacity registered by the American Medical Association as in "hospitals," and exclude all "related" institutions. The round numbers of 900,000 are used in preference to the exact figures of 895,671.

(b) Round numbers, based upon a detailed tabulation for 5,311 individual "hospitals."

(c) Estimated by using an average length of stay for six separate classes of hospitals, See Chapter IV, *The Crisis in Hospital Finance*, by Michael M. Davis and C. Rufus Rorem, for the method of arriving at average length of stay and comparisons with other estimates.

(d) Determined by multiplying patient-days of care by an average per-capita cost for each of six classes of hospitals, *op. cit.* p. 33–35.

The total is approximately $656,000,000 for operating expenses, excluding an allowance of $200,000,000 for new construction.* In this estimate, approximately two-thirds of the expense is for the maintenance of general and special hospitals, 25 per cent for institutions for nervous and mental diseases, and 9 per cent for tuberculosis hospitals. The total cost of hospital service in the United States represents an average expenditure of a little more than $5 per capita for operating costs, which include all expenditures (except for new construction) whether made as patients' fees, voluntary contributions, or tax payments. That all communities do not share this burden in proportion to their population may be observed from the following figures revealed by five community surveys * of the Committee on the Costs of Medical Care:

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* The expenditure for hospital construction during 1930 was probably less than $200,000,000 but this amount represents roughly the expenditures which have been made annually to replace or expand existing facilities and to establish new hospitals.

Community Studied	Per-Capita Expenditure
Chester County, Tennessee, 1930	$1.08
Shelby County, Indiana, 1928	3.14
Franklin County, Vermont, 1929	3.86
San Joaquin County, California, 1929	8.48
Philadelphia, Pennsylvania, 1928	15.53

Just as capital investment and hospital facilities tend to be concentrated in urban areas, the inhabitants of the large cities also spend larger and higher proportionate amounts for hospital care.

The various types of hospital facilities are not used to the same percentage of capacity or for the same periods of time by patients admitted for treatment. The average length of stay for patients in general and special hospitals is about 13 days, as compared with approximately 1,200 days for nervous and mental cases. For the entire country, about 97 per cent of the annual admissions are to general and special hospitals, approximately 1½ per cent are to institutions for nervous and mental diseases, and 1½ per cent to tuberculosis hospitals.

The average expenditure on the part of the patient or the public varies greatly with individual cases, but averages may be presented for each of the three types of hospitalization by dividing the annual expenditures by the annual admissions. For cases in general and special hospitals, the average cost is approximately $56; for tuberculosis cases, $460; and for admissions to hospitals for nervous and mental conditions, more than $1,300. These figures explain why the care of tuberculosis and nervous and mental illnesses have for many years been financed by entire communities; for not only do such cases require long periods of treatment, but they involve long periods of non-productive activity.

Acute medical and surgical cases, however, present a different problem to the patient and to the community. Such cases

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* See Chapter IX and Publications No. 6, 9, 12, 18, and 28, listed at the end of this volume.

usually require short periods of hospitalization, with a much lower "average" expenditure on behalf of each patient. As has been shown previously, the average cost of hospitalization for acute cases is distributed very unevenly through the population. In the first place, approximately 30 per cent of the patients admitted to general and special hospitals are cared for in government institutions, and are provided with hospital care through funds from the community treasury. The remaining 70 per cent (see Tables 61 and 62) who are cared for in non-government general hospitals incur average costs of more than $60 per admission. When allowance is made for physicians' fees, it is clear that the average cost of a hospitalized illness is well in excess of $100 for patients treated in non-government hospitals. Previous analyses, particularly in Chapter VII,

TABLE 61

ESTIMATED OPERATING COSTS OF HOSPITALS IN THE UNITED STATES, 1930

Type	Control		
	Government	Non-Government	Total
General and special....	$118,625,000	$315,690,000	$434,315,000
Nervous and mental...	145,416,000	20,104,000	165,520,000
Tuberculosis..........	39,690,000	16,320,000	56,010,000
Total................	$303,731,000	$352,114,000	$655,845,000

TABLE 62

ESTIMATED ADMISSIONS TO THE HOSPITALS IN THE UNITED STATES, 1930

Type	Control		
	Government	Non-Government	Total
General and special....	2,433,300	5,261,500	7,694,800
Nervous and mental...	96,900	27,900	124,800
Tuberculosis..........	88,200	34,000	122,200
Total................	2,618,400	5,323,400	7,941,800

have emphasized the unevenness of the burden among individuals in the same communities and of similar economic status. It suffices for the present discussion to point out that for the hospitals alone expenditures of nearly two-thirds of a billion dollars are made annually by, or on behalf of, 8,000,000 people, or approximately 6 to 7 per cent of the general population. With this introduction, attention may be directed to the problems of financing and costs which face the hospital administrators and the general public.

HOSPITAL INCOME

How is the money provided for the maintenance of hospitals? Where does the $656,000,000 come from to pay the salaries and to purchase the supplies and services necessary to care for the 8 million cases hospitalized each year? Table 63 presents estimates of the amounts derived from three main sources: patients' fees, voluntary contributions and endowment income, and taxes. Of the total sum, almost equal amounts are received from patients' fees and taxes, these two together constituting about 92 per cent of the total. About 8 per cent is at present supplied through voluntary contributions, whether as current gifts or as income from endowment capital. Non-government hospitals rely almost entirely upon patients' fees for current support, since only 14 and 7 per cent of their funds, respec-

TABLE 63

ANNUAL COSTS OF HOSPITAL SERVICES, SOURCES OF INCOME, 1930

Type of Control	Type of Income (In Millions of Dollars)			
	Patients' Fees	Contributions and Endowments	Taxes	Total
Non-government	277	50	25	352
Government	25	4	275	304
Total	302(a)	54	300	656

(a) Includes an estimated $24,000,000 contributed by industry for health services and payments under Workmen's Compensation Acts.

tively, are supplied through voluntary gifts and taxes. Conversely, government hospitals are supported almost exclusively (90 per cent) by tax funds.

PATIENTS' FEES

Patients' fees provide only a small proportion of the support of government institutions, but non-government hospitals are dependent primarily upon patients' fees for their support. According to present methods of hospital financing, therefore, the administrators of non-government hospitals must be concerned with ways of using fees paid by patients in such manner that (1) utilization of facilities will be increased, (2) the cost of production will be reduced, and (3) a sufficient and stable revenue will be provided from year to year. Unless these objectives can be achieved, attention must be turned to other sources of revenue, namely, taxes, voluntary contributions, and endowment earnings.

At the present time, hospital care in some non-government institutions is provided on a business basis of " purchase and sale." This method applies to approximately 2,400 hospitals conducted under proprietary auspices. These hospitals admit annually about one million patients at a total cost of approximately 70 million dollars largely met through patients' fees, for proprietary hospitals seldom, if ever, receive endowment income, voluntary contributions, or tax support. Non-profit association hospitals receive approximately 207 million dollars from patients' fees, and government institutions receive approximately 25 million dollars from patients. The proportions of current income derived by hospitals from patients' fees vary greatly among different sections of the United States and among hospitals in the same communities; for the country as a whole, the proportion is something less than 80 per cent; in the eastern states and in large cities the proportion is much lower than in western and southern areas and in small towns. For example, in 30 general hospitals which received aid from the United Hospital Fund in New York City in 1930, 12 million dollars was paid by patients toward operating costs of 19 million dollars; in 27 non-profit special hospitals in New York City, the patients' fees were $2,800,000 in a total of $8,400,000 operating costs *; in New York State, for the fiscal year ended June 30, 1931, 178 private non-profit hospitals for acute cases received 28 million dollars from patients' fees toward a total of 48 million dollars operating costs.

The estimate of 25 million dollars for patients' fees paid to hospitals under government auspices is based upon data procured from representative institutions. As a rule, the large municipal, county, or state hospital receives only "free patients." For example, the municipal hospitals of New York and Philadelphia and most of the large county hospitals derive less than 1 or 2 per cent of their support from patients' fees. The same condition obtains for the best-known county and state general hospitals such as those in Chicago, New Orleans, and Los Angeles. On the other hand, some well-known local government institutions are conducted for the service of entire communities, accepting patients who pay part or all of the costs of the services they receive. The latter group includes such institutions as the Worcester (Massachusetts) City Hospital, the Buffalo City Hospital, the John Sealy Hospital (Galveston), the San Joaquin County Hospital (California), and the state general hospitals at Baltimore, Indianapolis, Iowa City, and Portland, Oregon. Many of the county hospitals in small towns receive as much as one-third to one-half of their revenue from paying patients, but these institutions are small and do not represent a large total bed capacity in the United States.

VOLUNTARY CONTRIBUTIONS

Voluntary contributions provide about $30,000,000 annually toward the support of private non-profit hospitals in the United States. Of this total, approximately $10,000,000 is raised through "community chests," and the remainder by means of individual solicitation by hospital superintendents or trustees. This amount will seem surprisingly small to those students of medical economics who have assumed that American hospitals receive large amounts of money from socially-minded and generous citizens. The estimates are, however, liberal, and are based upon study of special material provided through the American Association of Community Chests and Councils and

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* *Fifty-First Year Book,* United Hospital Fund of New York.

the analysis of a large number of annual reports of non-profit association hospitals.

Voluntary contributions are not only a minor factor in hospital financing, but they are least reliable when most needed. In times of financial prosperity, when the need for voluntary contributions is least, they are most easily obtained. In times of financial crisis, when the number of indigent patients and of patients unable to pay for their hospital care increases, voluntary contributions decrease in number and in amount. This situation has made the solicitation of voluntary contributions exceedingly unsatisfactory as a method of stabilizing hospital revenue from year to year. At the present time (December, 1932), voluntary contributions to hospitals are exceedingly small and as a result many institutions have been forced to turn patients away from their doors, or to send them to government institutions for care.

ENDOWMENT EARNINGS

Endowment earnings have never been an important source of financial support for the hospitals of the country. They provide for not more than 3 per cent of the total costs of hospital service, even during prosperous years, and at the present time it is doubtful whether they cover more than 1 or 2 per cent. The accumulation of endowment is a slow process, for large amounts of money are required.

Hospitals as a class are not endowed to a sufficient degree to be materially affected in financial policy by endowment capital. An endowment of one million dollars ordinarily provides fifty thousand dollars yearly. The endowment necessary to provide operating costs for a general hospital bed is approximately $30,000, estimating an annual maintenance rate of $1,500 per bed. The income on existing endowment capital, if distributed among all American hospitals, would provide approximately 8 cents per patient-day. If the total existing endowment capital in American hospitals were to be relied upon exclusively for the support of hospital operating costs, it would be entirely consumed within six months.

Endowment funds are concentrated in the larger and older hospitals in the metropolitan areas. Among 548 hospitals with a total endowment of $278,000,000, more than 40 per cent was owned by 31 institutions, each of which controlled $2,000,000 or more. Sixteen of this latter group were affiliated with medical schools. Of 125 hospitals known to possess $500,000 or more endowment, 61 were in New York, Boston, Philadelphia, and Chicago. It is estimated that 70 per cent of all endowment capital is concentrated in the North and Middle Atlantic States.

A few city and county hospitals receive income from endowment earnings, such as the small local government institutions subsidized by the the Duke Endowment in North and South Carolina, and some of the very old city or county hospitals which have been established as community institutions for the general public. Several of the large hospitals previously mentioned as accepting pay patients receive revenue from endowment funds. Probably as much as 5 per cent of the 400 or more millions of endowment is controlled by hospitals operated by state or local governments.

TAXES

Tax funds provide more than 300 million dollars annually toward the costs of hospital care. Approximately one-half of this amount is used to support federal and state hospitals for nervous and mental cases. These hospitals, like those for tuberculosis, are financed almost completely from tax funds, although occasionally patients are required to pay stated amounts toward the costs of their hospital care. In the " general " hospitals, as has been shown, tax funds may be supplemented by substantial contributions from patients, who pay all or part of the costs of the services they receive.

The estimate of $25,000,000 contributed by state and local governments to support non-profit institutions is an estimate based upon a study of the publications of several state departments of welfare. In Pennsylvania, approximately $2,000,000 is appropriated annually as " state-aid " to more than 150 private hospitals. In 1931, a group of 215 private hospitals in New York reported receipts of nearly $5,000,000 from state, county, and city governments. A number of cities and counties have effected agreements by which local hospitals will be reimbursed for services to " indigent " patients. Such arrangements have been established throughout the United States, although nearly all " free " care is provided in government tax-supported hospitals or in non-profit hospitals which rely upon voluntary contributions.

In so far as non-government hospitals serve patients unable to pay the cost of their own hospital care, it is reasonable and logical that they turn to the general public for support and that they insist upon the receipt of tax funds in lieu of, or in addition to, voluntary contributions from philanthropic citizens. Where a sense of responsibility does not prompt a citizen to make adequate contribution to the cost of hospital care in his community, it is appropriate that compulsion through governmental taxation be employed as a means of stabilizing hospital revenue.

FIXED CHARGES

Plant and equipment are the first considerations in the provision of hospital care. Yet prevailing methods of capital financing for hospitals often tend to obscure the financial significance of these items. It is customary for non-profit associations to rely upon voluntary contributions from individuals or groups for the construction and equipment of hospitals. Yet once the plant and equipment are provided, the value of the services of the plant may find no place in the financial records or reports of the institution. Hospital accounts usually fail to include any record of such " fixed charges " as interest or depreciation on their capital investment.

It is occasionally stated that when plant and equipment have been provided through voluntary contributions, the value of the capital investment does not represent an actual cost of hospital service. Nevertheless, although fixed charges resulting from capital investment need not always be met during a current fiscal period, the costs of interest and depreciation eventually are borne by the community as a whole or by a single donor.

The average cost to the public for "fixed charges " varies inversely with the amount of hospital care given to its citizens. It is possible and frequently desirable to calculate the fixed charges per patient-day (or other unit of service) in much the same way as the operating costs per patient-day, so commonly referred to as per-capita costs, are determined. Calculations of this type, as may be observed from Table 64 show that the fixed charges per patient-day are a direct function of the capital investment per bed and the degree to which the hospital facilities are occupied. If the public is to receive the maximum benefit from its investment in a hospital, it is important that the benefits of the fixed charges be spread most widely among the public through maximum utilization of facilities.

Capital investment not only carries with it the inevitable fixed charges of interest and depreciation, but it also affects the total amount of expenditures which must be made to operate the hospital itself. The appropriateness of the capital investment, its size, arrangement, and geographical location all influence the amount of labor and the volume of supplies necessary to serve patients within its walls. For example, a hospital with improperly spaced nurses' stations will require larger personnel and greater expense for nursing care. A hospital with unduly high ceilings and unnecessarily elaborate halls and waiting rooms will involve large expenses for cleaning and other housekeeping services. An institution with elaborate plumbing apparatus or heating equipment will require the use of large amounts of fuel as well as additional personnel in the power plant.

TABLE 64

FIXED CHARGES PER PATIENT-DAY COMPUTED FOR VARIOUS INVESTMENTS PER BED AND AT 50 AND 75 PER CENT OCCUPANCY OF HOSPITAL[a]

Investment per Bed	Annual Fixed Charges per Bed[a]	Fixed Charges per Patient-Day	
		Occupancy 50 Per Cent	Occupancy 75 Per Cent
$3,000	$240	$1.32	$0.88
4,000	320	1.75	1.17
5,000	400	2.20	1.46
6,000	480	2.63	1.75
8,000	640	3.50	2.34
10,000	800	4.38	2.92
12,000	960	5.26	3.50

[a] The annual fixed charges are computed as 8 per cent of the total capital investment: 5 per cent interest and 3 per cent depreciation. The depreciation is estimated as follows: 2 per cent on the value of the buildings, assumed to be 70 per cent of the total, and 10 per cent on "equipment," assumed to be 15 per cent of the total. Land is assumed to be 15 per cent. These figures for depreciation are somewhat below those ordinarily recommended by hospital accountants.

It is apparent from these brief illustrations that capital investment in hospitals exercises a profound influence on the amount and quality of hospital service which may be purchased for a given sum of money. If a hospital is built without regard to the needs of a community and if its facilities are not adequately utilized, it involves large annual fixed charges which might more appropriately be devoted to the local initiation or support of other important social activities. Moreover, excessive fixed charges in one hospital increase the difficulty which other hospitals must meet in raising funds to finance necessary medical care.

OPERATING COSTS

The costs of hospital care may be regarded from the point of view of the community or of the institution. For the institution, the problem of costs is associated with the internal efficiency and utilization of plant and equipment. The community point of view regards the total expenses for hospitalization in all institutions, including replacement or expansion of plant and equipment which may be provided by periodic or occasional large gifts or " drives " for endowment.

Two types of expense are incurred in the provision of hospital care, expenses which differ not only in their effect upon the cost of units of hospital service, but also in the method by which the costs are paid. These two types of cost may be roughly classified as " fixed charges "—which do not vary in amount with the volume of service rendered and " operating costs " which are incurred when, as, and if the hospital is open to receive patients and actually does admit them.

Within the category of operating costs there are two major groupings which appropriately should be recognized in a study of hospital efficiency—"readiness-to-serve " costs and " service " costs. The readiness-to-serve costs include the expenditures which are necessarily incurred if the hospital is to be held in readiness to accept patients. These costs must be incurred regularly even though no patient is admitted to the institution. They include such expenditures as the salaries of the administrative staff, the heat, light, and power service, maintenance of the laundry and the kitchen, and the supervision of nursing. In each hospital a substantial percentage of expenditures for these functions may be said to be irreducible in amount if the hospital is to be kept open and if a certain number of beds or other hospital facilities are to be held in readiness for use. " Service " costs, on the other hand, represent expenses which are incurred directly on behalf of patients and which are not required unless patients actually are accepted in the institution and are treated in its various departments. These expenses include such items as the costs of drugs and medicines, laboratory supplies, and food for patients.

" Per-Capita " Costs in Hospitals.—It is customary for hospital costs to be measured in terms of a " patient-day," which means a day of service to a patient who requires the use of a bed. This cost (" per-capita " cost, " per-diem " cost, or " cost-per-patient-day ") is determined by dividing the total expenses of a particular fiscal period by the sum of the daily patient censuses during the fiscal period. The cost-per-patient-day for individual institutions will vary according to the following factors:

1. Whether acute or chronically ill patients are accepted (a factor which influences the total personnel and the amount and kinds of supplies required).
2. The size of the institution (which influences the opportunity for savings through large-scale operations).
3. The degree of utilization (both of beds and scientific apparatus and equipment).
4. The complexity of services offered (such as X-ray and laboratory).
5. The maintenance of an out-patient department (the patients of which do not utilize hospital beds).
6. The use of the hospital for teaching purposes (training of nurses or undergraduate or graduate physicians).
7. The conduct of medical research.
8. The size of community (which influences the prices which must be paid for personal service and commodities).
9. The efficiency of management (which affects the volume of service rendered for a given expenditure).

The studies of the Committee did not make possible the establishment of average costs-per-patient-day for hospitals of various sizes, types of control, and types of medical service to the same degree that was attempted in the measurement of capital investment per bed.* However, for purposes of estimating the total operating costs of hospitals in the United States, certain amounts were determined as the average "cost-per-patient-day" for hospitals in each of six different categories, as shown in Table 65. Each of the figures in the table requires some explanation of the method by which it was calculated. Obviously, an average figure does not necessarily apply to any particular institution or even to any group of institutions in a particular community.*

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* See the Appendix on Method, Publication No. 7, listed at the end of this volume.

TABLE 65

ESTIMATED COST PER DAY IN REGISTERED HOSPITALS, 1930

Type	Cost per Day	
	Government Hospitals	Non-Government Hospitals
General and special	$3.25	$5.00
Nervous and mental	1.00	4.00
Tuberculosis	2.50	4.00

Per-Capita Costs in Government Hospitals.—The figure of $3.25 for government hospitals providing general and special care for acute medical and surgical cases is equivalent to approximately $1,100 per patient per year. This figure is an average of the per-capita costs in a variety of different kinds of government institutions. For example, for the care of veterans and members of the armed forces, averages of approximately $4.50 including the costs of a full-time medical staff are incurred in federal hospitals. State general and special hospitals are for the most part large institutions, and a substantial number of them are connected with university medical schools which require extensive out-patient departments for medical education and research. The majority of the government hospitals for acute conditions are under city and county auspices, with high percentages of occupancy and relatively long average stays by indigent patients. Some of the smaller city and county hospitals provide very limited service with a per-capita cost as low as $2 per day. Similarly, some of the large city and county institutions, such as those in New York, Chicago, and St. Louis, have very low per-capita costs.

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* The figures in Table 65 include all hospital "operating costs," not merely the costs of "in-patient service." They exclude all allowances for interest, depreciation, or new construction of buildings.

The average of $1 per day in hospitals for nervous and mental cases is based upon the annual reports of state institutions in 24 different states and a report of the Bureau of the Census, *Mental Patients in State Hospitals* (1928). The annual reports of the state departments which control these hospitals show average costs per patient-day which range from $0.50 to $2.50, with an average of $0.87 per day for all state hospitals in 1928. The average costs in federal hospitals for mental cases (approximately $3 per day) exceed those for state institutions. A somewhat higher average obtains, also, for the smaller hospitals conducted by cities and counties. The average of $1 per day, however, is considered by the authors as a fair estimate of the net cost per patient-day in government hospitals for nervous and mental cases. Costs in government hospitals for the care of tuberculosis (an average figure of $2.50) stand midway between hospitals for nervous and mental diseases and those for acute medical and surgical conditions.*

Per-Capita Costs in Non-Government Hospitals.—Non-government hospitals for the care of acute medical and surgical cases are the most characteristic American institutions for the care of the sick. They include both the voluntary non-profit association hospitals and those organized as private enterprises by medical practitioners. A cost of $5 per day appears to be typical of all such institutions in the country as a whole. In some areas a lower average cost per day is to be found, although the larger and better-equipped hospitals in metropolitan districts frequently involve costs which range from $6 to $9. These higher average costs have resulted primarily from the expansion of activities in large institutions which include many and varied diagnostic procedures and a high quality of nursing and medical education, as well as medical research. Whether or not this average figure is too high or too low for a particular institution depends upon the factors cited above. A wide difference is found between a teaching hospital in a large city connected with an institution such as Columbia, Johns Hopkins, Western Reserve, or the University of Chicago and a 25-bed institution conducted by two or three physicians in a small town in South Carolina or Mississippi. At the present time, per-capita costs in non-government general hospitals are undoubtedly higher than necessary because the occupancy in such institutions, whether they be in metropolitan or rural communities, is generally low.

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* The average figure of $2.50 is based upon a study of the annual reports of the United States Veterans' Administration, the Department of the Interior, state commissioners of public health and others who control state tuberculosis institutions, and the reports of individual hospitals under the auspices of local and county governments. There is, of course, wide variation among particular institutions, depending upon size of the institution, geographical location, types of cases admitted, and efficiency of administration.

An arbitrary cost of $4 per day has been assigned to the non-government hospitals for the care of nervous and mental cases and for tuberculosis. Institutions for nervous and mental cases are of two types: small proprietary sanatoria for nervous disorders, managed by individual physicians; and large comprehensive institutions such as the Bloomingdale Hospital at White Plains in New York, and the Psychiatric Institute at Columbia University Medical Center, the unit for mental diseases at the Pennsylvania Hospital in Philadelphia, and the McLean Hospital in Boston. Institutions for the care of tuberculosis likewise vary greatly in size and equipment; they include the boarding homes in Arizona, in southern California, and in the western section of North Carolina, as well as very complete and scientific services in tuberculosis hospitals conducted by churches, fraternal orders, and voluntary non-profit associations.*

Limitations of Per-Capita Cost as a Measure of Hospital Services.—Hospitals have not uniformly agreed upon a definition of any of the items involved in the calculation of cost-per-patient-day—the *cost*, the *patient*, or the *day*. The following quotation from the 1932 report of the Committee on Bed Occupancy of Hospitals of the American Hospital Association sets forth the advantages to be gained from a uniform basis of defining cost-per-patient-day and presents definite suggestions for the achievement of desirable uniformity:

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* The wide variation, even of average costs, according to communities and states, may be illustrated by the following: In 1923 a study of the United States Bureau of the Census, *Hospitals and Dispensaries*, 1923, indicated that 2,500 general hospitals (government and non-government combined) were conducted at an average cost of $4.81 per patient-day. *Statistics Compiled from Annual Reports of Ohio Hospitals*, 1931, indicated that the average per-capita costs for general hospitals was $6.05, with the institutions occupied to 52 per cent of capacity throughout the year; tuberculosis hospitals (all types of control) showed per-capita costs of $3.10; non-government nervous and mental hospitals, $5.17; average patient-day costs (all types) $4.80; *The Annual Report of the Division of Medical Care, 1930-31*, of the Department of Social Welfare, State of New York, indicated the following per-capita costs: government hospitals, general, $3.85; tuberculosis, $3.20; non-government, general, $6.50; tuberculosis, $2.00. The 1930 *Annual Report of the Hospital Section*, Duke Endowment, showed average per-capita costs as follows, after deducting allowances for out-patient services: 53 general hospitals (government and non-government) in North Carolina, $4.00; 27 general hospitals in South Carolina, $3.80; 10 tuberculosis sanatoria in North Carolina, $2.25; 6 tuberculosis sanatoria in South Carolina, $2.15. Dr. Emil Frankel, in a special study of 61 large eastern general hospitals, determined per-capita costs to be $5.71 for the year 1929. The costs for individual institutions ranged from $3.34 to $9.31, with 16 showing averages of less than $5.00 and 9 more than $7.00.

> "'*Cost-per-patient day' should be calculated on a comparable basis by hospitals.* The nomenclature of many important hospital terms is at present in such state that comparisons are often unreliable, and any permanently satisfactory plan must wait upon further study. The following suggestions are put forth tentatively in anticipation of a broader plan. (*a*) 'Operating costs' should exclude 'fixed charges,' *i. e.*, all interest payments and allowances and depreciation allowances on permanent assets. (*b*) Hospital-days of care for newborn infants should be listed separately from adult-days and child-days. In some communities it has been found very satisfactory to regard an infant-day as the economic equivalent of a fractional day of care for adult patients or for children. In any case the number of infant-days of care should be indicated. (*c*) In calculating the 'cost-per-patient-day' there should be excluded all costs of service to out-patients. Costs of serving out-patients include expenses which are independent of the in-patient service; it is both illogical and confusing to include out-patient department costs in the calculation of 'cost-per-patient-day'" *

The services of a modern hospital are complex and include many items which have little or no connection with the days of care rendered on behalf of in-patients, for example: diagnoses and treatments in the X-ray department, surgical operations, tests in the clinical laboratories, treatments in the physical therapy department, diagnostic procedures in the determination of basal metabolism. One patient may spend twenty-four days in the hospital and receive scarcely any medical care other than conventional and routine bedside nursing; another patient during a period of five or ten days may receive many and varied types of special services. Moreover a large number of services are rendered to patients who attend the clinic or out-patient department of the institution and never occupy hospital beds.

In some hospitals other important activities are also carried on—the education of physicians and nurses and the performance of medical research. The expenses of these activities might usefully be separated from the costs of other hospital care in order (*a*) that they may be financed from separate sources, and (*b*) that more efficient methods of work may be developed. It is particularly important to segregate the costs of educating undergraduate medical students in the so-called teaching hospital affiliated with a medical school. The need for segregation of costs is less acute in the case of student nurses and interns who devote their full time and attention to a particular institution, for in most instances the services of student nurses and interns are not affected by the fact that they are rendered by individuals in pursuit of professional education.

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* *Report of the Committee on Bed Occupancy of Hospitals*, 1932, Bulletin No. 96, American Hospital Association, 18 E. Division Street, Chicago.

SOME GENERAL OBSERVATIONS REGARDING HOSPITAL SERVICE

The following general observations concerning the economics of hospital service were presented by the author of Publication No. 7 of the Committee on the Costs of Medical Care. Because of their far-reaching significance and the factual bases on which they are developed, they are recapitulated here:

I. The public owns the hospitals generally and will probably continue to carry the major burden of the fixed charges. The advantages of hospital facilities accrue in large degree to the entire public; hence the provision of hospital capital by the general public through taxation and voluntary contributions is an equitable procedure.

II. The public might well exercise better control over the provision of capital investment. This may be accomplished through organized community approval of hospital construction programs, as well as through improved apportionment of patients and kinds of hospital service among existing institutions. Such a policy would release funds for other community purposes.

III. Capital investment in hospitals should be held to an absolute or relative minimum consistent with effective medical practice. Such investment cannot be withdrawn for other purposes, nor is it desirable to restrict plant and equipment in such manner as to reduce the quality or amount of medical care. Consequently only by using the hospital facilities to their maximum capacity can the capital investment be most fully justified.

IV. Capital investment in hospitals would be more effectively utilized if integrated with the total medical activities—preventive, diagnostic, and therapeutic—of the community.

V. Fixed charges (interest and depreciation on invested capital) should be regarded as costs correlative with lay and professional services and with consumable supplies. They involve recurrent, though irregular, expenditures which must be met if hospital service is to be continued.

VI. Hospital financing should attempt "equitable" distribution of capital costs among beneficiaries (patients, medical professions, general public).

VII. The allocation of fixed charges against the various hospital functions—bed care, medical diagnosis and treatment, medical and nursing education, and medical and social research—would provide the basis for more effective financing of the various services.

VIII. Hospital fees should be established with more regard to the total costs of services rendered, including fixed charges, even though it is not intended to recover these costs in full from all patients.

IX. Knowledge of the total costs—by hospital authorities and by the public—is a prerequisite to the assessment of these costs against different groups of contributors or patients, or the removal of any or all of the burden. Certain groups of patients might consider hospital bills more reasonable if the element of interest and depreciation were properly appreciated.

X. Fixed charges, even though borne by the general public, must be included in the records and reports of hospitals, if the costs and economies in one institution are to be comparable with those of another. It is unfair to the hospitals to omit these expenditures from the comparisons, and it is unwise for a community to regard "operating costs" as the total costs of hospital service.

CHAPTER XX

THE GROWTH OF CLINICS *

The care of ambulatory patients has from time immemorial been provided in the physician's office. But in recent times the concentration of equipment and personnel in hospitals, and the advantage of coordinated professional services have led to the treatment of large numbers of persons—particularly the indigent or very poor—in hospitals or in separately organized clinics.

GROWTH IN NUMBER OF CLINICS

Fifty years ago out-patient departments of hospitals were almost unknown. In the large cities, the " worthy poor " were cared for in " dispensaries," such as the Philadelphia Dispensary, founded in 1786; the New York Dispensary, founded in 1791; the Boston Dispensary, founded in 1796; and the Northern Dispensary, founded in New York in 1827. These institutions were established by philanthropic groups to serve the indigent sick. Persons were at first admitted only on presenting cards from those who contributed to the support of the dispensaries. Later, any one unable to pay a physician's fee was eligible. The principal service rendered by the physicians to patients at these institutions was the " dispensing " of drugs, after a cursory examination.

From 1875 to 1900 a number of teaching clinics were established by medical schools to give students an opportunity to examine patients in the earlier stages of disease. Among those still in existence are the Vanderbilt Clinic in New York, the Central Free Dispensary in Chicago, the Washington University Clinic in St. Louis, and the clinics of Western Reserve Medical School in Cleveland. The out-patient departments of the Bellevue Hospital in New York, the Massachusetts General Hospital in Boston, and the Johns Hopkins Hospital in Baltimore were developed largely through the activities of medical schools.

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* The tables and numerical data presented and cited in the section dealing with " Clinics " are based upon a detailed study by Margaret L. Plumley entitled *The Growth of Clinics, 1931* (The Julius Rosenwald Fund, 1932).

In 1900 there were probably less than 150 clinics in the country, including those attached to hospitals and those conducted independently.* By 1921, a study made by the American Medical Association † reported 3,944 out-patient departments of hospitals and independent clinics as known to the Association. In 1931, according to statistics on out-patient service presented in the Hospital Number of the *Journal of the American Medical Association*,‡ and in a study of independent (or unattached) clinics made by the Julius Rosenwald Fund in cooperation with the American Public Health Association, the American Dental Association, and the National Committee on Mental Hygiene, the number was nearly 8,000.

Clinics may be classified primarily according to whether or not they are conducted as the out-patient departments of hospitals or as unattached administrative units designed solely for ambulatory cases. By far the greatest number of clinics are conducted under public auspices, for there are 6,577 such organizations, in contrast with the estimated 200 clinics conducted by groups of private practitioners and 1,000 by industrial enterprises. The present discussion will be concerned with the 6,577 public clinics, since private clinics are discussed in Chapter XXV of this volume, and industrial clinics are treated in Part VIII, among examples of "Recent Developments in Methods of Paying for Medical Care."

HOSPITAL OUT-PATIENT DEPARTMENTS

The data in Table 66 indicate a very definite concentration of clinic services in New England and in the Middle Atlantic States. This is particularly noticeable with regard to hospital out-patient departments, 40 per cent of which are located in the northeastern portion of the United States. The development of out-patient service is usually associated with the larger, older hospitals in metropolitan areas, most of which are in the

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* Michael M. Davis and Andrew R. Warner, M.D., *Dispensaries, Their Management and Development* (The Macmillan Company, New York, 1918), p. 36.

† American Medical Association, "Dispensary Service in the United States," reprinted with additions from the Hospital Number of the *Journal of the American Medical Association*, October 21, 1921, Vol. 77, p. 1447-1448, and August 5, 1922, Vol. 79, p. 464-478.

‡ American Medical Association, Hospital Number, *Journal of the American Medical Association*, June 11, 1932, Vol. 98, p. 2074.

North and Middle Atlantic sections, although Ohio, Michigan, and Illinois each contains 80 or more hospitals with out-patient departments.

A comparison of the number of general out-patient departments in hospitals * (not out-patient departments in general hospitals) showed an increase from 703 departments in 1921 to 1,562 in the year 1931. Although every section of the United States reported substantial increases in numbers, the proportionate growth was greatest in the South and South Atlantic and in the Far West. In the South the admission and treatment of ambulatory cases by hospitals has not developed to the same extent as in other sections, although great strides have been made in North Carolina, Texas, Oklahoma, Mississippi, and Tennessee during the past five years. California hospitals have established a greatly increased number of out-patient departments. In the Middle Atlantic States, where

TABLE 66

NUMBER OF HOSPITAL OUT-PATIENT DEPARTMENTS AND INDEPENDENT PUBLIC CLINICS IN THE UNITED STATES IN 1931, ACCORDING TO GEOGRAPHICAL LOCATION

Geographical Location(a)	Hospital Out-Patient Departments	Independent Public Clinics (Not Attached to Hospitals)	Total Public Clinics
New England	228	500	728
Middle Atlantic	564	1,547	2,111
South Atlantic	224	274	498
East North Central	322	1,079	1,401
South Central	251	376	627
West North Central	179	244	423
Far West	274	515	789
Total	2,042	4,535	6,577(b)

(a) The states included under each group are as follows: *New England:* Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. *Middle Atlantic:* Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania. *South Atlantic:* Florida, Georgia, North Carolinia, South Carolina, Virginia, and West Virginia. *East North Central:* Illinois, Indiana, Michigan, Ohio, and Wisconsin. *South Central:* Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas. *West North Central:* Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. *Far West:* Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

(b) The addition of 200 private group clinics (estimated) and 1,000 industrial clinics (estimated) brings this total to 7,777.

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* *Cf. The Growth of Clinics in the United States*, Margaret L. Plumley (The Julius Rosenwald Fund, 1932), p. 18.

out-patient departments have continued to function and to expand their volume of service, the slowest relative growth in numbers has occurred.

More than one-half of the 2,042 out-patient departments were, in 1931, organized in hospitals under non-government auspices, with a total of 1,372 in this classification. Of the 670 government hospitals which provide out-patient services, 297 are controlled by cities and counties, 194 by states, and 179 by the Federal Government. Although local government hospitals frequently offer general medical care to the entire public, usually their services are restricted to those who are indigent or very poor. A similar policy is followed by state hospitals, although much of their service is of a specialized nature, such as for the care of mental or tuberculosis cases. The Federal Government limits its out-patient services almost exclusively to government employees and to present or former members of the armed forces.

A classification of out-patient departments according to the type of medical service offered by the respective hospitals reveals the fact that approximately 70 per cent of the total number (1,464) are in hospitals registered as " general " by the Council on Medical Education and Hospitals of the American Medical Association. The remainder are more or less evenly distributed among the hospitals for special types of cases, as follows: nervous and mental, 97; tuberculosis, 134; maternity, 31; industrial, 89; institutional, 74; other special hospitals, 153. Approximately one-third of the registered general hospitals in 1931 reported out-patient departments. This number included most of the 1,000 general hospitals containing more than 100 beds in 1931, and nearly one-half of those reporting bed capacities of 51 to 100.

INDEPENDENT OR " UNATTACHED " CLINICS

In addition to the 2,000 hospitals in the United States which furnish ambulatory care, approximately 4,500 clinics provide general or specialized services independently of hospitals. This estimate includes as one clinic all activities conducted under one roof even though they may be supported by separate agencies. For example, one clinic includes a " baby health " service under the auspices of a local public health nursing association, a venereal disease unit financed by the city, and a dental clinic supported by the "settlement" in which the activities are housed. The term independent clinic excludes all "round-ups" for specialized treatments which are held less frequently than once each month.

About one-third of all independent clinics, or 1,547, as shown in Table 66, are in the Middle Atlantic States, and more than one-half of these are in New York or in Pennsylvania. Of the 515 in the Far West and the 500 in New England, the majority are concentrated in California and Massachusetts, respectively.

In contrast to hospital out-patient departments, most of the independent clinics are under government auspices; thus, 1,796 are conducted by cities or counties, 424 by states, 168 by the Federal Government, and 193 jointly by two or more government units. Non-government groups, such as public health nursing associations, the Red Cross, churches, settlements, men's and women's clubs, parent-teacher associations, etc., maintain 1,228 clinics without government aid (131 of this group are supported by two or more agencies). Private philanthropy and tax funds are joined to finance the activities of 726 clinics. In Wisconsin alone there were reported 390 clinics supported conjointly by the state, by the city or county health department, and by a local voluntary agency.

A classification of independent clinics according to the types of medical service offered is less simple than the corresponding grouping of hospital out-patient departments. No accepted nomenclature has been adopted for the various classes of clinic service, but the 4,535 independent clinics may be roughly classified into those which provide preventive or so-called public health services, and those which offer curative treatments. On this basis, 4,303 (or about 95 per cent of the number) offer treatment of a preventive nature, and only 232 are therapeutic in the sense that services to the individual patient receive greater emphasis than strictly community services. Of the 4,303 "preventive" clinics, more than 2,000 offer services which may be classified as "infant welfare," 1,100 are devoted to "preschool" children, and 800 specialize in prenatal and postnatal care. Dentistry is provided in 860 of these clinics, tuberculosis is treated in 730, and venereal diseases in 439.

Other important services are offered in the following number of clinics: eye, ear, nose, and throat examinations in 249; psychiatry in 239; pediatrics in 185; nutrition in 176; health examinations in 163.

Special mention should be made of 107 travelling clinics because of their methods of procedure. They consist of one or more physicians or nurses who visit rural areas in accordance with a weekly or monthly schedule. Most of these clinics give maternity and child welfare, tuberculosis, and immunization services, and for the most part they are under the auspices of local governments, particularly counties.

Of the 232 independent clinics reported as engaged in curative service, 159, or two-thirds, are conducted either by the United States Public Health Service or by the Veterans' Administration. Only a few non-government clinics for curative services in the eastern states remain unaffiliated with hospitals. Among this group, however, are the Cornell Clinic in New York City, the Utica Dispensary, the Baltimore General Dispensary, and the Northern Dispensary, Philadelphia. The Cornell Clinic has become a part of the New York Hospital-Cornell University Medical Center. A large number of separate clinics for acute conditions are maintained in Mississippi, in Louisville, Kentucky, and in Kansas City, Missouri.

ANNUAL VOLUME OF CLINIC SERVICES

The volume of service in out-patient departments and unattached clinics may be expressed most satisfactorily in terms of visits, using the term " visit " to mean one contact between a patient and a department of the institution. From the data cited in Miss Plumley's report it is apparent that the total number of visits for the year 1931 may be estimated as from 35 to 50 millions. Reports from 3,456 clinics show a total of 31,400,000 visits, of which 23,400,000 were to 1,385 out-patient departments and 8,000,000 to 2,071 independent clinics. It will be observed that the out-patient departments provide the greater part of the total ambulatory service rendered—even though these departments are fewer in number than the clinics which are not attached to hospitals. For the groups reporting, the out-patient departments had an average of 23,000 visits each annually as compared with 4,000 visits for the independent clinics.

The concentration of clinic services in the Middle Atlantic States is even greater than the concentration of institutions, for 11,000,000 out-patient department visits and 3,000,000 independent clinic visits are recorded in this section of the country. The volume of services is also concentrated in metropolitan areas; the 25 largest cities in the United States accounted for 14,000,000 visits to hospital out-patient departments in 1931. This total figure is nearly twice the number reported for the same cities in 1921.

Since clinic patients probably tend to return for more complete service than formerly, the growth in visits does not represent a corresponding increase in number of cases treated. An estimate for the clinics reporting numbers of patients and visits to the American Medical Association in 1927 and 1931, revealed the fact that the average number of visits per patient had increased from less than 2 to something more than 3.

DENTAL SERVICE IN CLINICS

Two studies of dental clinics in the United States * show that there were 2,856 clinics in 1932 which offered dental services exclusively or in conjunction with other professional services. Of this number 1,530 clinics replied to a questionnaire from the offices of the American Dental Association and furnished many important facts concerning geographical distribution, control, and service.

During 1932, at least 2,000,000 persons received treatment at dental clinics, most of which were located in the larger eastern cities. Local and county governments controlled 30 per cent of the clinics; state and federal governments, 18 per cent; hospitals, 25 per cent; lay and charitable organizations, 13 per cent; dental schools and societies, 9 per cent; industries and business firms, 5 per cent. However, 41 per cent of the "chairs" were provided in clinics under the auspices of dental schools and societies. Dental clinics in hospitals have grown

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* *A Study of Dental Clinics in the United States*, 1930, by Miriam Simons Leuck (University of Chicago Press, 1932); also *A Further Study of Dental Clinics in the United States*, by Miriam Simons Leuck (University of Chicago Press, 1932).

consistently in number during recent years, but local government units, through school health services, constitute the chief agencies in providing clinic dental service other than for teaching purposes. Nearly all dentists employed in the smaller clinics (less than 5 dentists each) receive some remuneration, usually a stated salary, but more than one-half of all dentists in the larger clinics donate their services. All industrial clinics rely exclusively upon paid service, whereas 70 per cent of all hospital dentists are unpaid. School services tend to be on a "no fee" basis. Hospital clinics have in recent years tended to charge moderate fees for dental services, even though other medical care was provided free of charge.

CHAPTER XXI

THE COSTS OF PUBLIC HEALTH ACTIVITIES AND SOME TRENDS IN PUBLIC HEALTH PRACTICE

Early in the development of its program the Committee on the Costs of Medical Care recognized the importance of studying public health costs; but it planned no national inquiry in this field because partial or complete surveys were already in progress or had been projected by other agencies. Many phases of the subject have received adequate consideration in other documents. The special interests of this volume call only for estimates of personnel and expenditures and for reflection upon certain general trends in public health practice. The data presented here are based upon records accumulated from several sources *; and though the procedures utilized in making these estimates are at some points rough and arbitrary, the results are probably not wide of the mark.

It is difficult to define precisely the scope of public health; the definition widely quoted and accepted by professional public health workers is that presented more than a decade ago by Winslow: "the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will insure to every individual a standard of living adequate for the maintenance of health; organizing these benefits in such fashion as to enable every citizen to realize his birthright of health and longevity." † The very citation of such a definition presents clearly the broad scope of activities which are, on one occasion

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* Principally the Committee on Administrative Practice of the American Public Health Association, the American Child Health Association, the United States Public Health Service, and the Committee on Public Health Organization of the White House Conference on Child Health and Protection. Extensive use has been made of material contained in the following volume: *Public Health Organization;* Report of the Committee on Public Health Organization of the White House Conference on Child Health and Protection, New York, 1932.

† "The Untilled Fields of Public Health," *Modern Medicine,* 1920, Vol. II, No. 3, p. 183.

or another, embraced in the term public health and indicates the many borders of human interest on which public health impinges.

In this discussion public health agencies are distinguished from other medical agencies through the unique characteristic that public health service is provided to the community or population group as a whole rather than to the individual. Obviously, no such distinction with respect to service can be clear-cut; the boundary between public health and other medical agencies is a broad zone rather than a sharp line.

Some activities which are for the benefit of community health (such as the provision of potable water, street cleaning, sewage disposal, and the elementary teaching of physiology and hygiene) are ordinarily performed by other than public health agencies; some services customarily provided by official or voluntary health agencies are services for individuals (*i. e.*, educational and bedside visiting nursing, immunization against infectious disease, hospitalization for communicable disease). But there is a broad field commonly designated by the term "public health," which is traditionally the special interest of public health agencies. In the tabulations which follow, all activities of public health authorities are included, with the exception of hospital and clinic care. For reasons of convenience, hospital and clinic facilities administered by public health agencies have been treated in the general discussion on hospitals (Chapters XVIII to XX), and in this chapter neither personnel nor cost data include this item.

Public health activities in the United States are primarily functions of the local governments operating under charter or other form of legislative delegation from the sovereign people through their respective state legislatures. Most public health work is done through municipal and other local (chiefly county) official agencies, with state authorities acting mainly in a supervisory capacity. In addition, six departments of the Federal Government,* which operate under statutory provisions based upon certain minor clauses in the Constitution,† perform public health functions. Some of these federal activities, like the drafting of international sanitary treaties by the State Department, are incidental to other tasks; some, like the activities of the Department of Agriculture with respect to the purity of foods and drugs and the control of animal diseases, are very important. A large portion of all federal health work is performed by the United States Public Health Service, a bureau of the Treasury Department.

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* Treasury, Agriculture, Labor, Commerce, Interior, and State Departments.

† *Cf.* Report of the Committee on Public Health Organization, Section II A, White House Conference on Child Health and Protection, *op. cit.*, p. 201.

In addition to the federal, state, and local official agencies, many non-official organizations play important rôles in the maintenance of community health, especially in the development of new and improved procedures. It is therefore convenient to consider a census of public health agencies in five categories: federal, state, municipal, county or rural, and voluntary. The origin, development, and current practices of agencies in each of these five categories have been adequately described in other recent publications and need not be recapitulated here.*

AN ESTIMATE OF PUBLIC HEALTH PERSONNEL

In Table 67 appears an estimate of the personnel engaged in public health work in the United States. The data are only approximations, for no comprehensive records are available for all classes of people employed by public health agencies. The estimates are based upon various compilations, some of which apply to the year 1929, some to 1930, and some to 1931. Each three part-time employees of health departments (principally municipal departments) have been arbitrarily counted as one full-time employee. For the non-official (voluntary) agencies, a reliable census can be made only for nurses; other employees are omitted from this estimate. Thus, the totals accumulated here grossly understate the full count.

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* The reader who is interested in pursuing this subject further should consult the following documents and the volumes to which they in turn refer:

A Report on State Public Health Work Based on a Survey of State Boards of Health, by Charles V. Chapin (American Medical Association, 1915).

Public Health in the United States, by Harry H. Moore (New York, 1923).

"Report of the Committee on Municipal Health Department Practice," *Public Health Bulletin* No. 136 (United States Government Printing Office, Washington, D. C., 1923).

A Health Survey of 86 Cities (American Child Health Association, New York, 1925).

"Municipal Health Department Practice for the Year 1923," *Public Health Bulletin* No. 164 (United States Government Printing Office, Washington, D. C., 1926).

"Health Departments of States and Provinces of the United States and Canada," *Public Health Bulletin* No. 184 (United States Government Printing Office, Washington, D. C., 1929).

The State Health Departments of Massachusetts, Michigan, and Ohio, by James Wallace (The Commonwealth Fund, New York, 1930).

Health on the Farm and in the Village, by C.-E. A. Winslow (New York, 1931).

Annual Report of the Surgeon General of the Public Health Service of the United States (United States Government Printing Office, Washington, D. C., 1931).

Public Health Organization, op. cit.

Public Health in New York State, Report of the New York State Health Commission (Albany, 1932).

Community Health Organization, edited by Ira V. Hiscock for the Committee on Administrative Practice of the American Public Health Association (The Commonwealth Fund, New York, 1932).

It may be said from the tabulation that there are *at least* 3,200 physicians, 1,000 dentists, 15,900 nurses, and 21,100 other individuals (full time or their equivalent), or a total of 41,200 persons engaged in the work of public health agencies in the United States.

TABLE 67

AN ESTIMATE OF THE PERSONNEL ENGAGED IN PUBLIC HEALTH WORK

Based Upon Data Variously Applying to the Years 1929 to 1931

Type of Control	Type of Personnel				
	Physician	Dentist	Nurse	Other Employees	All Types
Federal	805(a)	45	211	6,976	8,037
State	200(b)	984	496	3,604	?
Municipal	1,583(c)		8,994	9,376	?
Rural	590(d)			1,141	?
Voluntary	?		6,164	?	?
Total	3,178(?)	1,029(e)	15,865(f)	21,097(?)	41,169(?)

(a) United States Public Health Service only, July 1, 1931.
(b) Estimated.
(c) Includes 787 full time and 2,388 part time, the latter counted as ⅓ full time.
(d) In departments operating throughout 1929.
(e) For the year 1929 (see p. 247).
(f) For the year 1931 (see p. 263).

However reliable these estimates may be, they are understatements not only in the items already cited, but also in others which have not yet been stated. The tabulation includes only those persons engaged in professional or in non-professional technical capacities; it is without regard for the thousands of non-remunerated persons who devote part of their time to the activities of official and non-official agencies (such as members of boards of health, advisory councils, professional reference and advisory committees, lay executive bodies for non-official agencies, fund-raising agents); nor are the services of private practitioners in preventive medicine, sanitary engineering, or laboratories included. Some indication of the magnitude of these numbers can be seen from the large memberships of national organizations devoted to professional fields of public health work. It may be that at least as many more persons as are counted in the professional and technical categories contribute significantly to public health activities in the United States; taken by and large, safeguarding the public health occupies the attention of about 100,000 persons.

It is interesting to compare these estimates of personnel engaged in public health work with the numbers which would be required if public health practice were on a level with the needs of the times and were in accord with the dictates of public health science. From an analysis of the public health personnel needed for a typical community of 100,000 persons,* the following estimates were deduced for the United States in 1930. These figures include only the personnel for local public health activities:

Personnel	Number Required for the United States (1930)
Health officers	1,228
Physicians	2,456
Epidemiologists	1,228
Bacteriologists	1,228
Chemists	1,228
Sanitary engineers	1,228
Inspectors	9,824
Statisticians	1,228
Educational directors	1,228
Clerks	8,596
Technicians	1,228
Directors of nursing	1,228
Supervisors of nursing	3,684
Public health nurses	30,700
Medical social workers	2,456
Total	68,768 †

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* See Publication No. 22, listed at the end of this volume.

† This number is far more conservative than the number which would be deduced from the proposals endorsed by the Committee on Administrative Practice of the American Public Health Association (*Community Health Organization, op. cit.,* Table 8) for a city of 100,000 population. As against 56 persons required per 100,000 in the tabulation presented above, the Committee on Administrative Practice endorses 85 to 90 per 100,000. The difference is in large part due to the fact that our computations are based on the needs for each 100,000 in the population of the United States, and theirs on the needs of the same number living in a city of this size.

Thus, if the local communities of the United States were receiving adequate public health service and protection they would be utilizing the services of nearly 70,000 trained individuals. Instead, they employ not many more than 29,000,* or about 40 per cent of the required number.

There is no form in which the social application of science more clearly or more certainly pays dividends than in the application of public health science. It has been repeatedly demonstrated that organized community effort to guard and improve the public health more than pays for itself in improvements in health, in vigor, and in economic as well as in social well-being. Yet even in a year (1930) when economic circumstances were comparatively good, the communities of the United States were seriously backward in providing for themselves the benefits which can be derived from the utilization of sanitary science and preventive medicine. In times of adversity, when there is a tendency to reduce community expenditures, the contrast between opportunity and practice is even greater.

It is well known that inadequate salaries, uncertain tenure of office, and political interference with public servants have discouraged many competent individuals from careers in public health service. In consequence, there have been no large numbers seeking special training in the public health sciences or in the techniques of administrative practice. If the communities of the United States were suddenly persuaded to increase their public health personnel to a parity with their true needs, they could not find competent personnel. Indeed, the country does not even possess the requisite facilities for the training of the people whose services are needed.

EXPENDITURES FOR PUBLIC HEALTH ACTIVITIES

In Table 68 there is presented a summary of expenditures for public health work, other than for the operation of hospitals maintained under public health auspices. These figures, like those for personnel, err on the side of understatement. *At least* $110,500,000 (or 90 cents per capita) is spent annually for public health work in the United States. Approximately one-half of this sum comes from municipal tax funds, one-fourth from federal, state, and county funds, and one-fourth from non-official sources. With allowance for items not included in the compilation, especially for rural counties which conduct health organizations under the direction of part-time health officers, the total becomes approximately $1 per capita.

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* This is the total shown in Table 67 minus the numbers engaged under federal or state auspices.

TABLE 68

ANNUAL NATIONAL EXPENDITURES FOR PUBLIC HEALTH, 1929–1930

Type of Agency	Gross Amount	Duplications(a)	Net Expenditures
Federal(b)	$5,239,242	$350,604	$4,888,638
State(c)	13,825,254	1,107,540	12,717,714
Municipal(d)	58,439,496	....	58,439,496
County (Rural)(e)	7,471,563	....	7,471,563
Voluntary(f)	27,500,000	505,454	26,994,546
Total	$112,475,555	$1,963,598	$110,511,957

(a) These funds are appropriated by the indicated agency, but are expended by county authorities for rural health services.

(b) From *Report of the Committee on Public Health Organization*, of the White House Conference, *op. cit.*, p. 219–221.

(c) Based upon data compiled by the source cited in (b) above, and miscellaneous estimates for ten states not included there.

(d) For the year 1930. Based upon data cited in (b) above, in the report on *Financial Statistics of Cities*, United States Bureau of the Census, and miscellaneous estimates for municipalities with 2,500 to 30,000 persons each.

(e) Based upon compilation of funds from federal and state sources—see notes (b) and (c) above—and for counties with full-time health organizations operating throughout 1929. *Cf.* reference cited in (b) above, p. 158.

(f) *Cf.* reference cited in (b) above, p. 226.

It may be assumed that for the population of the United States (1930) the total expenditure for public health services approximates 123 millions of dollars.

The gross inadequacy of current expenditures to provide good and sufficient public health care may be illustrated by two examples. First, as compared with the current expenditure of 65 to 80 cents per capita in American cities,* a reasonable and conservative standard of performance † calls for $1.79 to $2.13 for the same services in cities with populations of approximately 100,000. Second, in contrast with current expenditures of less than 35 cents per capita for county and rural health work, Winslow's studies in Cattaraugus County ‡ indicate that a comprehensive public health program in these areas calls for an investment of approximately $2.50 per capita.

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* Exclusive of communicable disease hospitalization.

† *Cf. Community Health Organization, op. cit.*, Chapter XVIII.

‡ *Health on the Farm and in the Village, op. cit.*, p. 17.

TRENDS IN PUBLIC HEALTH PRACTICE

It were gratuitous to review here the growth of American public health practice and the accomplishments in education, control of morbidity and mortality, and in changes in sanitation and habits of living. Two points are, however, significant to our field of interest. These concern (1) the trends with respect to the scope and interrelationships of federal and local activities, and (2) the changing relations between public health and the private practice of medicine. Both are exemplified in the problems which would be faced if one were to attempt close scrutiny and analysis of the data contained in the two preceding tables. Why do federal, state, and local public health personnel overlap? Why are expenditures by one authority made with funds derived from another? Why are large numbers of part-time professional practitioners in the employ of public health agencies?

1. In recent years there has been evident a growing tendency for federal and state authorities to concern themselves in the public health programs of local areas. The Federal Congress and state legislatures have indicated their interest in these matters by enacting (permissive) legislation whereby subsidies may be granted to local areas for the performance of " demonstrations " and special undertakings in the field of public health. Appropriation of funds for cooperative rural health work is an illustration of the rôle which the Federal Government is playing in an attempt to stimulate and encourage the local development of public health measures.

Many rural areas most acutely in need of the advantages which may be conferred by preventive medicine are commonly in most straightened economic circumstances. For lack of money they cannot effectively apply public health measures; for lack of effective public health measures their people are so debilitated that their economic circumstances remain (or become increasingly) unfavorable. How can this vicious circle be broken? Financial subsidy from larger and more prosperous population groups has been one of the means attempted.

It has been estimated by the rural health division of the United States Public Health Service * that the establishment of efficient, well-balanced, full-time, rural health service throughout the country would cost about $20,000,000 a year. These authorities have also estimated that our annual national economic loss in wage-earnings and in other items incident to preventable sickness directly attributable to lack of reasonably efficient, county health service is over $1,000,000,000. And, finally, they and others have called attention to the fact that money invested for well-directed, full-time, county health service yields to the average local tax-paying citizen an annual dividend in dollars and cents ranging from 100 to 3,000 per cent.

It is amazing to discover that on January 1, 1930, over 76 per cent of the rural population of the United States was as yet unprovided with official local health service even approaching adequacy. Although there were approximately 50,500,000 persons living in rural areas, scarcely more than 12,000,000 persons in these areas had the benefit of local health services under the direction of full-time health officers. The United States Congress first appropriated funds for rural sanitation work in 1917 when it made $25,000 available for distribution through the United States Public Health Service. In 1918 and 1919 Congress appropriated $150,000 each year. In the years 1920 to 1924, inclusive, $50,000 per annum was appropriated. Since then, Congress has appropriated an increasing amount which rose to a maximum of $347,000 in 1929 and equalled $346,000 in 1930 and $338,000 in 1931. (In the last year, it appropriated in addition $2,000,000 to be used for special public health purposes in the areas affected by the drought.)

The fund specifically appropriated each year to the United States Public Health Service for work in rural areas cannot, under the provisions of the appropriating act, be applied to a community unless the state, county, or municipal agency concerned agrees to pay separately or in combination with another agency at least one-half of the expenses of the demonstration work. It is seldom the case that the federal fund is more than

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* *Cf.* "Extent of Rural Health Service in the United States, 1926-1930," by L. L. Lumsden, *Public Health Reports*, May 9, 1930, Vol. 45, p. 1065.

25 per cent of the amount appropriated in any single local area, and the federal grant is commonly matched from local sources by more than five times the sum. Thus the federal funds serve primarily to encourage and stimulate useful and effective local expenditures of considerably larger amounts. Nevertheless, the development of rural health work is still far from adequate.

In the years 1920 to 1930, there was an average annual increase of about 40 counties with full-time health officers. At such a rate of progress about 50 years more would be required for the extension of reasonably adequate rural health service to all communities of the country in which such service is needed. It is obvious that other resources and stronger stimuli must be applied to bring to the rural parts of the country the advantages that accrue from sanitation and improved community health service.

2. Two decades have seen a profound change in the objectives of public health—from the environment of man to man himself; from sanitation and control of the communicable diseases to education in hygiene and healthy living. The older activities have not been discarded but newer ones have been added. This assumption of additional duties has compelled public health authorities to become more concerned than formerly with the individuals who collectively constitute the community. And as their interest has been translated into activity and performance of service, an increasing friction has developed between progressive public health authorities and private practitioners in various medical professions. In the nature of the case, this has been inevitable.

On the whole, it may be said that official health agencies have been concerned with the provision and administration of such services as concern the community as a whole or as cannot be provided by individuals or by other than official agencies; that non-official agencies have been essentially concerned with new developments and experiments; and that the private practitioners have had reserved to them the field of medical care for the individual. In recent years, two new concepts have seriously disturbed these relationships. The first is recognition of the rôle which preventive—in contrast with curative—measures should play in the practice of medicine;

the private practitioner must become an adjunct to the health officer. If preventive medicine is to be made effective it must, in the last analysis, be made effective by the individual physicians. Second, there has come into the public consciousness a wide acceptance of the view that it is more consequential for the public's needs to be served than for the several professional agencies to restrain their activities within arbitrary or traditional lines of demarcation. Whether rightly or wrongly, wisely or unwisely, there is today a strong public sentiment that preventive medicine as much as therapeutic medicine is in the field of the individual physician, and, equally, that therapeutic medicine may become an obligation on public authorities charged to take all reasonable and necessary precautions to conserve the public health. It is commonly recognized that an official public health agency need not and should not enter the field of therapeutic medicine in communities in which the therapeutic needs of the people are being reasonably met by non-official agencies. But it is becoming increasingly clear that the official agency may not refrain from providing therapeutic procedures when these are not otherwise supplied, merely because the health department and other official agencies have not traditionally assumed this burden.

To illustrate these trends of overlapping fields of interest it is only necessary to cite a few examples. In most progressive communities, approximately 50 per cent of the children immunized against diphtheria receive their immunizing doses of toxin-antitoxin or toxoid at the hands of private physicians; the other one-half receive them from public servants. In many cities and in some semi-rural and rural areas, tax funds are allocated for the construction and operation of hospitals, dispensaries, and clinics, and for the services of physicians, dentists, and nurses who render medical and surgical care in addition to diagnostic services or advice and counsel. Tax funds are used by federal, state, and local official agencies to provide materials such as vaccines, antitoxins, and drugs like quinine and arsphenamine—whether these are to be utilized and administered by public servants or by private practitioners.

The increasing tendency of government agencies to engage in the practice of medicine takes many forms, perhaps as varied as are the considerations from which the incentives spring. For example, the Veterans' Administration of the United States Government spent in the fiscal year 1930-1931 about $50,000,000 for the medical care of persons, 70 per cent of whom were treated for disabilities that were not " of service origin." Apparently among the members of the Congress the sense of obligation to certain political constituents was greater than acceptance of the proprieties or of traditional division of interests between private medical practitioners and public medical servants.

In many types of communities, public health departments operate contagious disease hospitals which are available to all persons in the community, whether or not they are able and do pay all, part, or none of the costs for the care rendered.* Official health agencies provide extensive care for persons infected with venereal diseases. Official health agencies provide infant, child, and maternity welfare facilities—restricted in some places to diagnostic and educational services, but in others including therapeutic care for all persons or for those who cannot obtain, or cannot afford to pay for, such services if privately obtained. Through their official agencies some communities undertake provision of medical care and hospitalization for persons afflicted with certain chronic diseases such as cancer and rheumatism—even as traditionally they have provided care for the mentally afflicted and for the tuberculous. Other official agencies go beyond these points and attempt to educate the public in the prevention of disease, in the care of illness and in the importance of seeking timely medical advice. To these ends the official agencies recommend that services be obtained from private practitioners; but for those who (will not or) cannot for financial reasons seek private practitioners, public servants and facilities are available.

It is still a credo in most communities that the provision of therapeutic care shall properly remain the field of the private practitioner of medicine. But it is also becoming increasingly the practice that such care shall be provided by official agencies (not always by public health agencies) and from tax funds: (1) where it is not otherwise available; (2) when the private purchase is financially difficult or impossible; or (3) where substantial economies to the patients or the community can be effected by "mass production" methods, as in performing Wassermann tests or syphilis treatments.

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* In 1928, of 92 registered " isolation " hospitals, all but two were under government auspices. *The Public's Investment in Hospitals,* by C. Rufus Rorem (University of Chicago Press, 1930), p. 18.

In summary it might be said: It is today the tendency in many communities that the public health agency shall recognize its full responsibility for the public's health; that it shall not actively enter those fields in which reasonably adequate care is provided the people through private practitioners and agencies at costs which are within their means, but that it shall enter any and all fields in which experience demonstrates that the public health were better or more economically served by public than by private agencies or by the public agency in conjunction with private practitioners than by either alone. In addition, there is a growing recognition that public health agencies must often assume the responsibilities for improving the standards of medical practice in the community.

To continue this discussion further would carry it into the controversial questions of the relations of the state to the private practice of medicine; it would entail invasion of subjects which have been only indirectly embraced in the program of the Committee on the Costs of Medical Care,* and upon which the Research Staff has made no specific inquiry except indirectly in the performance of the community surveys.†

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* The reader who is interested in pursuing this subject further might consult *International Studies on the Relation Between the Private and Official Practice of Medicine with Special Reference to the Prevention of Disease* (3 volumes) and *Medicine and the State,* by Sir Arthur Newsholme (Baltimore, 1931 and 1932).

† See Chapters IX and X of this volume, and Committee Publications No. 6, 9, 11, 12, 13, and 23, listed at the end of this volume.

CHAPTER XXII

MEDICINES AND OTHER MEDICAL COMMODITIES

In addition to the services of medical practitioners and of medical institutions, there are also available to the public two general classes of commodities which may be purchased for the care and prevention of illness—(1) eye-glasses and surgical supplies; (2) drugs and medicines. According to the estimates for the year 1929, annual expenditures for these two items account for more than 750 million dollars.

Purchases of eye-glasses account for approximately 50 million dollars of annual expenditure. A relatively small proportion of the total expenditure represents eye-glasses self-prescribed by the patient. Both purchases of eye-glasses and of medical and surgical supplies may be regarded as auxiliary expenditures made under the auspices of medical practitioners or institutions, even though the practitioner or institution has no direct control over the purchase or the replacement of lenses or the purchase of supplies for minor injuries.

THE COSTS OF MEDICINES *

Nearly everyone buys some drugs. Purchases of medicines are often voluntary. The amounts spent by individuals or families for drugs and medicines during a given period do not show very wide variation, and they seldom, if ever, equal sums which are catastrophic in their effects upon the family purse. Consequently, there has been no general outcry against the total national expenditures for drugs and medicines even though the annual amount is of the same order of magnitude as the payments for physicians' services or for hospital care. *The purchases of drugs and medicines by members of the general public amount to approximately two-thirds of a billion dollars annually.* In a study of the economic aspects of medical care, it is impossible to disregard so large a proportion of the national bill for sickness (from 15 to 20 per cent of the total is spent for medicines) even though the public makes the purchases without audible complaint.

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* See Publication No. 14, listed at the end of this volume.

The National Bill for Medicines.—The people of the United States spend approximately $715,000,000 annually for drugs and medicines. It is estimated that only 27 per cent ($190,000,000) of the total cost of drugs is spent with the direct advice of medical practitioners and institutions, while $525,000,000 represents amounts spent by the public for self-medication (see Table 69).

TABLE 69

THE COSTS OF MEDICINES IN THE UNITED STATES(a)

The Annual National Expenditure, According to Types of Medicines Consumed and the Consumers' Sources of Supply(b)

Type of Medicine	Distributing Agent				
	Drug Stores (Pharmacies)	Other Retail Stores, Mail-Order Houses, Venders	Physicians' Offices	Hospitals and Dispensaries	Total
Physicians' prescriptions.....	$140,000,000	....	$25,000,000	$25,000,000	$190,000,000
Home remedies..	150,000,000	$15,000,000	....	....	165,000,000
Patent medicines.	335,000,000	25,000,000	....	....	360,000,000
Total......	$625,000,000	$40,000,000	$25,000,000	$25,000,000	$715,000,000

(a) Committee on the Costs of Medical Care, Publication No. 14, p. 18.

(b) This estimate and the distribution of the total are submitted as an approximation for the year 1929, and are based upon data from three main sources: (1) studies of the Committee on the Costs of Medical Care, consisting of completed reports on the medical facilities of selected communities, and published data concerning the annual costs of medical care to 9,000 families; (2) data from the Bureau of the Census, particularly the *Census of Manufactures* for 1929 and previous periods, and the *Census of Distribution*, for 1929; (3) miscellaneous studies and estimates made by agencies which have surveyed the financial phases of the drug trade in recent years.

The medical profession thus controls or directs the consumption of medicines worth somewhat less than $200,000,000. Of this amount, approximately $140,000,000 represents the costs of prescriptions purchased at drug stores on the written order of medical practitioners; and the remainder, or $50,000,000, is estimated as the value of the drugs used or dispensed in doctors' offices or in hospitals and laboratories.

Drugs purchased by the public for self-medication are of two main types: "home remedies" and "patent medicines."

The retail sales of home remedies account for $165,000,000, or 23 per cent of the total drug bill of the United States. Whereas home remedies, are, as a rule, bought without the express instruction of the medical profession, the general classification includes chiefly non-secret preparations which are on the whole approved by the medical profession, and many of the purchases are doubtless made at the informal suggestion of medical practitioners. The annual sales of "patent medicines" amount to $360,000,000. The consumption of these products is condemned in no uncertain terms by the medical profession as representing a waste of money and a source of potential harm in the temporary alleviation of symptoms of illness rather than in the eradication of causes.

The average expenditure tends to increase with the income level of the family. Urban families spend more for medicines than those living in rural communities. Expenditures for medicines prescribed by physicians are greatest in urban areas and among the higher income groups. The annual expenditures for medicines tend to increase with the annual expenditures for medical care incurred by a family; but the proportion of expenses for medicines tends to decrease as the total for all medical care increases.

Pharmacies are the main channel through which the ultimate consumers purchase drugs. These institutions effect, in their drug and medicine departments, total annual sales amounting to $625,000,000, of which 22 per cent represents prescriptions compounded for patients at the written order of medical practitioners. Mail-order houses, department stores, general stores, and itinerant venders sell drugs and medicines valued at approximately $40,000,000 annually. Physicians and medical institutions such as hospitals and clinics purchase each year from wholesale and manufacturing houses drugs and medicines worth $50,000,000.

The Pharmacal Profession.—The pharmacal profession comprises a group of specialists trained to prepare drugs and medicines and to compound and dispense prescriptions according to the written orders of medical practitioners. The profession represents a division of labor in the field of medical care, and the practice of pharmacy may be regarded as a specialized branch of the "practice of medicine." The pharmacist is subsidiary to the medical practitioner in his capacity of compounder and dispenser of remedial agents ordered by the physician. State governments, recognizing the danger of potent drugs in unskilled hands, have required that pharmacists give proof of their training and qualifications, and have restrained all unlicensed persons from performing the major functions of pharmacy.

Pharmacists as a group have developed a rigorous code of ethics with regard to professional practices, and they have carefully defined the scope of their legal and ethical privileges in dealing with physicians and with persons who seek medical care. Their code decrees that a pharmacist must not usurp the prerogatives of a physician by prescribing medicine for a patient or by attempting to diagnose a patient's condition. The pharmacist may (within certain legal limitations) sell any drug or medicine which a patient requests, but he must not attempt to pass judgment on the suitability of a medicine for a given symptom.

There is a marked concentration of pharmacists in urban communities, due not only to opportunities for greater success in the retail drug business but also to the tendency of urban physicians to "prescribe" medicines rather than to "dispense" from their own offices. But even in cities only a fraction of the individual pharmacist's time is used in the compounding and dispensing of medicine in the ordinary drug store; on the average he compounds about four prescriptions per day (about eight per pharmacy). The rest of his time is devoted to preparing medicines in bulk, to dispensing packaged remedies and supplies, and to serving as a general clerk in a drug store or as manager and proprietor of a retail pharmacy. Approximately 165,000,000 prescriptions are filled annually by the 132,000 pharmacists and assistant pharmacists in the 60,000 pharmacies in the United States. The total sale price of these prescriptions is approximately $140,000,000, averaging about $0.85 per prescription—an amount which represents only a little over $1,000 per year per pharmacist, or a little over $2,000 per pharmacy, excluding all deductions for supplies or other overhead costs.

Unless there is a reversal of the present tendency to prescribe manufacturers' trade-marked "specialties," the pharmacist will continue to devote but a part of his time to the tasks for which he is specifically trained and will receive but a small income from his professional service. The present incomes of registered pharmacists usually range from $30 to $50 a week, reaching totals of $100 per week where administrative responsibilities are assumed.

The standards of education and experience for a license to practice as a registered pharmacist are being raised in most states. At the same time, reputable drug manufacturers are producing more and more complex pharmaceutical preparations ready for immediate sale in drug stores or dispensing in doctors' offices.

Pharmacies.—The "pharmacy," or "drug store," is a retail store in which there is present, as owner or employee, a pharmacist licensed by the state to sell and prepare medicines and to compound and dispense physicians' written prescriptions. There were in 1930 approximately 60,000 drug stores, with annual sales of $1,650,000,000. This amount, however, does not represent sales of drugs and medicines alone, for pharmaceutical preparations constitute less than 40 per cent ($625,000,000) of the business of the drug stores of the United States; the remainder consists of general merchandise, particularly tobacco, confections, and toilet goods. The average annual sales of all commodities sold are approximately $28,000 per store (see Table 70), although there is great variation in sales for individual units, some reaching such amazing totals as $500,000 annually.

The decade from 1920 to 1930 witnessed a tremendous growth in the number of pharmacies operated by national and sectional chain store systems. These chain drug stores, of which there are approximately 4,000, are almost exclusively located in cities of more than 25,000 inhabitants. The total annual sales of the chain stores are about $300,000,000, but much of this amount represents sales of general merchandise to which the chains devote special effort. Their sales of drugs and medicines are of relatively minor significance. The typical drug store carries in stock several thousand items of drugs and

TABLE 70

ESTIMATED PHARMACY (DRUG STORE) SALES FOR 1929, ACCORDING TO SIZE OF COMMUNITY AND TYPE OF ORGANIZATION(a)

Population Groups	Chain Stores			Independent Stores			All Stores		
	Number of Stores	Average Sales	Total Sales	Number of Stores	Average Sales	Total Sales	Number of Stores	Average Sales	Total Sales
10,000 and over	3,650	$75,000	$273,750,000	27,850	$28,000	$779,800,000	31,500	$33,444	$1,053,550,000
2,500–10,000	300	50,000	15,000,000	10,700	25,000	267,500,000	11,000	25,682	282,500,000
Rural	50	40,000	2,000,000	17,450	18,000	314,100,000	17,500	18,063	316,100,000
Total	4,000	$72,688	$290,750,000	56,000	$24,311	$1,361,400,000	60,000	$27,536	$1,652,150,000

(a) From Publication No. 14 of the Committee on the Costs of Medical Care, p. 53.

medicines and a much larger assortment of other types of merchandise.

The selection of drugs and medicines adequate to serve a pharmacist's patrons may involve a clash between professional ethics and commercial interests. Druggists allege that the medical profession and the efforts of the manufacturing industry compel unnecessary duplication of brands and types of pharmaceutical preparations. The ethics of pharmacy do not permit the pharmacist (and in some cases legal restrictions actually forbid him) to " substitute " one drug of equivalent therapeutic action for another, or even different brands of substances identical in chemical composition, one with the other, in compounding prescriptions.

Sales of drugs and medicines are usually made on a cash basis, a practice in sharp contrast to the services of medical practitioners, most of which are rendered in advance of payment.

The business in medicines is not sufficient to maintain the 60,000 pharmacies or drug stores. Consequently, many unrelated side-lines are carried by these stores, and the business in general merchandise has enabled many stores to remain in existence and to supply pharmaceutical service. Attempts to establish exclusive prescription pharmacies have met with some success in the larger communities, but public demand for convenient prescription service precludes general extension of such enterprises.

Manufacturers of Medicines.—The medicine manufacturing industry is organized on an industrial rather than a professional basis. Manufacturers of medicines as a group do not have uniform advertising and sales policies, because of the differences in the methods by which they distribute their products. Some enterprises specialize in the manufacture and sale of " druggists' preparations " and " ethical specialties " intended to be prescribed by doctors or sold under manufacturers' trade-marks by retail druggists. Some manufacturers of " druggists' preparations " and " ethical specialties " sell their products almost exclusively to physicians for office dispensing to patients. These manufacturers have little or no direct contact with the public through either wholesale or retail drug stores, although some sell their products to hospitals and other medical institutions.

"Patent medicine" manufacturers utilize wholesale and retail channels of distribution, but advertise their products almost exclusively to the general public, emphasizing the curative qualities rather than the chemical composition of their medicines. In some instances, the "patent medicine" firms are exclusively merchandising agencies which sponsor certain products.

Few compounded medicines have been granted patents by the United States Patent Office, although many chemical substances used as medicines or components of medicines are patented. Most manufacturers rely upon trade names for commercial protection. Some important patent preparations are sponsored by non-profit organizations, which receive royalties from manufacturers using the patents—for example, viosterol is manufactured under the Steenbock patent held by the Wisconsin Alumni Foundation; the patent for insulin is held by the Banting Foundation of the University of Toronto.

Wholesale Dealers in Drugs.—The drug wholesale dealer is the one link in the system of distributing drugs and medicines which does not function in both a professional and business rôle. He is primarily a business man, serving the drug manufacturer and retail dealer, with but slight interest in the problems and difficulties of the medical or pharmacal professions. Such professional interest as may be exhibited by many wholesale firms arises from the fact that they are also engaged in manufacturing and in the bulk purchase of crude drugs. Most independent retail druggists purchase the majority of their stock of goods from wholesale houses. Retail chain store systems, of course, are supplied from their own central warehouses.

Medicine Advertising.—Of the total annual sums received from the sale of medicines, approximately 10 per cent—$70,000,000—is devoted to advertising. Retail pharmacies do not as a rule advertise at their own expense particular drugs which they have for sale; less than 1 per cent of receipts from medicine sales is devoted to advertising. Retail dealers' advertising accounts for annual expenditures of about $5,000,000.

The wholesaler dealer advertises his institution rather than his product, and directs his sales appeal primarily to the retail druggist rather than to the public. Advertising by wholesale firms accounts for but $1,000,000 of the total medicine advertising bill. In sharp contrast to retail and wholesale establishments, manufacturers spend large amounts for advertising. Manufacturers of secret preparations for self-medication advertise direct to the public, emphasizing the unique virtues of remedies designated by their trade names. Approximately $64,000,000, out of a total of $70,000,000 spent in advertising medicines, represents the outlays of manufacturers. Some "patent medicine" manufacturers are known to devote as much as one-half their total income to advertising. Much smaller proportions of income are spent by manufacturers who advertise solely to the medical profession or to the drug trade.

"Quack" Medicines.—On the outer fringe of the "patent medicine" business, there still exists a group of medicine fakers whose stock in trade consists of spectacular or subtle promotion schemes and whose remedies are purchased only by the most ignorant or most gullible fraction of the public. There is the "medicine show," with oriental or Indian trimmings, and the travelling "doctor" with his confidential advice and "secret cure." Cures for cancer, tuberculosis, and other deep-seated or incurable diseases are offered through the mails and by extravagant advertisements in foreign-language or "home weekly" papers as well as in the larger dailies. This phase of the "patent medicine" business represents less than 15 per cent of the total bill for "patent medicines" and is gradually being stamped out. The fact that such business continues is evidence of the inadequacy of existing federal and state drug laws, which do not prohibit the sale of dangerous or deleterious drugs unless they violate certain labelling requirements. In the distribution of quack medicines, the label is the last thing the customer reads. In any event, the label cannot be read until the medicine has been purchased.

Public Control of the Medicine Industry.—Through governmental agencies and professional groups, the public has exercised some control over the methods used in the manufacture and sale of drugs and medicines. Most regulation, however, has been directed to control the purity of products rather than the therapeutic value of the drugs offered for sale. The Federal Food and Drug Administration is concerned exclusively with the prevention of adulteration or misbranding of drugs and medicines. The manufacturer is required merely to tell the truth on the label of his product. He may sell any product he wishes, provided he does not violate legal restrictions with regard to the sale of poisonous drugs, narcotics, and alcoholic liquors. Certain " official " products may be sold only by pharmacies, but " patent medicines " and many other remedies may be offered to the public through general stores.

The Federal Food and Drug Administration has reduced the practice of overt misrepresentation on the part of " patent medicine " manufacturers. It studies carefully statements with regard to the therapeutic activity of preparations and requires them to be in accord with the consensus of " modern medical opinion " in the United States. Medical opinion considers that but few drugs are directly valuable in the treatment of specific diseases and conditions; consequently the label claims of manufacturers have been greatly modified and restricted in recent years. Although the Federal Food and Drugs Act of 1906 did not explicitly include advertising other than on labels in its requirements as to truthfulness, the activities of federal officials have tended to influence the character of advertising for medicines. But though the letter of " patent medicine " advertising has been changed, the spirit remains the same. The growth of " patent medicine " sales illustrates, not so much improvement in the quality of medicine, as improvement in advertising technique; for the American public buys medicines as well as other commodities simply because they are extensively advertised.

The U. S. Pharmacopœial Revision Committee and the National Formulary Committee have authority to establish and revise lists of " official " drugs and also to establish the standards by which they are to be judged. The former committee includes representatives of the medical and pharmacal professions, of the manufacturers of medicines, and of the Federal Food and Drug Administration. The National Formulary Committee is made up largely of representatives of pharmacy.

The American Medical Association, through its Council on Pharmacy and Chemistry, examines carefully all preparations submitted to it and grants or withholds approval on the basis of the therapeutic merit of the article, as well as the suitability of the trade name adopted for the product. This association, and more recently the American Dental Association following suit, has exercised an important restraining influence upon unethical practice and rendered significant service to the public.

The Pharmacal and Medical Professions.—It is not always easy for physicians and pharmacists to keep within the bounds which their respective professions have established. Some physicians compound and dispense medicines in their own offices. A pharmacist occasionally diagnoses a customer's ailment and prescribes a medicine for him. A more subtle divergence from conventional procedures is illustrated by the increasing tendency of physicians to prescribe medicines already compounded under proprietary names. As a result the pharmacist loses the opportunity to compound extemporaneous prescriptions. Moreover, the patient subsequently often takes it upon himself to purchase, for self-medication, the trade-marked preparation originally prescribed for him by the physician. Pharmacists have responded to the physician's practice of prescribing proprietary medicines by instituting propaganda to the physician in favor of " official " drugs and medicines.

The direct economic competition between the sale of medicines for self-medication and the services of medical practitioners and institutions has provoked a conflict, as inevitable as it has been continuous. The physician, realizing the limitations of medicines as therapeutic agents, even though they may be selected with the greatest care to suit a patient's needs, is duly alarmed at the increased tendency of the public to diagnose conditions of which it has no scientific knowledge and to treat them with medicines concerning which it has no unprejudiced facts. " Patent medicine " manufacturers in turn attribute the opposition of the medical profession to selfish interests and greed for the profits to be gained from the care and prevention of illness. " Patent medicines " are referred to as the " poor man's medicine," and certain drug manufacturers pose as champions of the cause of reducing the costs of medical care.

In governmental regulations with reference to the therapeutic value of medicines, the opinion of physicians is taken as a criterion for the truthfulness of a manufacturer's statement. The situation is, therefore, one in which the medical profession is both an advocate for the restriction of "patent medicine" manufacture and a judge of the evidence submitted. Society has allowed the medical profession to be the judge of its economic competitor, the "patent medicine" industry. The opinion and judgment of professionally trained persons have been regarded as less biased than the opinion of manufacturers whose earnings are derived from the sale of medicines.

It has been urged that all retail sales of drugs and medicines should be made under the supervision of registered pharmacists. But some courts have held that this proposal is illogical with regard to secret preparations advertised to the general public. So long as the formula of the "patent medicine" is secret, these courts have held, the pharmacist is unable to give any more advice regarding it than the intelligent layman able to read the label. It is true, however, that in spite of the failure of a manufacturer to disclose his formula, the composition of his product does not usually remain secret in the drug industry.

It would be reasonable, of course, for the pharmacal profession to join with the physicians in advocating the discontinuance of the manufacture and advertisement of "patent medicines." But pharmacists cannot insist on control of the retail distribution of "patent medicines" unless they are also willing to advise patients in the selection of medicines based on a knowledge of their composition.

The principle underlying permission to manufacture and distribute secret-formula products for general consumption is based on the assumption that a patient is qualified to determine for himself the suitability of a drug by comparing the symptoms described in an advertisement with those which he experiences. If this assumption is valid, the "patent medicine" manufacturer may argue that no limitation should be placed *on the sale of his product. If this assumption is not valid, "pat-*

ent medicine" manufacture and distribution should be discontinued and prohibited in the interests of the public.

Recommendations Concerning the Costs of Medicines.—The authors of a special study on the costs of medicines * have presented four specific recommendations with respect to the future of the medicine business and the pharmacal profession. Because of their far-reaching implications, these recommendations may be presented here as suggestive for the type of problem which faces the general public and the medical and pharmacal professions:

I. More adequate use should be made of the professional knowledge and skill of pharmacists by such methods as: (*a*) increasing the opportunities for prescription compounding through elimination of the prescribing of branded products by physicians; (*b*) permitting the instruction of drug store customers in the proper use of medicines which are purchased for self-medication, but not to the extent of diagnosing patients' ailments or recommending medicines based upon description of symptoms; (*c*) arranging for the distribution by the pharmacist of general health information prepared by health departments, both with regard to medicines and general matters of hygiene; (*d*) arranging for the distribution of information to the public concerning the availability of physicians and hospitals, on the basis of lists of physicians provided by local medical or hospital associations.

II. Agencies should be established to prepare and disseminate accurate information concerning the proper use of selected lists of "home remedies" appropriate for self-medication. The lists should be established by a committee of physicians and pharmacists of unquestioned reputation and standing; the distribution of the literature may be accomplished by health departments, hospitals, drug stores, or appropriate lay associations. Universal and unnecessary use of home remedies, "patent medicines," and other self-prescribed medicine should be vigorously discouraged.

III. Secret-formula drugs and medicines should be abolished through the compulsory disclosure on the label of the kind and quantity of medicinal ingredients. Individuals or enterprises which have developed new and distinct preparations should be financially protected by appropriate privileges granted by the United States Patent Office or by a disinterested agency established for the purpose.

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* See Publication No. 14, listed at the end of this volume.

IV. All manufacturers of drugs and medicines, regardless of class or kind, should be required to operate under annual licenses to be granted by the Federal Government upon the fulfillment of satisfactory conditions with regard to competency of personnel, equipment and sanitary surroundings, and standardization of finished products.

PART VII

RECENT ECONOMIC DEVELOPMENTS IN THE PROVISION OF MEDICAL CARE

CHAPTER XXIII

PROFESSIONAL AND ECONOMIC PROBLEMS OF PRESENT-DAY MEDICINE

The foregoing chapters of this volume have directly or indirectly presented many problems associated with the provision of, and payment for, medical services under the traditional and widely current methods of individual private practice. In this and the subsequent section (Parts VII and VIII) a brief description and analysis will be given of certain recent economic developments in methods of providing and financing medical services, since many forms of experimentation and modifications of medical practice are to be found in this country. Some of these developments have been extensive and gradual; others, sporadic and sudden. But all are attempts (*a*) to lower the costs of furnishing medical care, or (*b*) to provide wider and more equitable distribution of medical services and their costs. In this classification of recent economic trends, one or the other objective is emphasized (efficient production or equitable financing) in spite of the fact that in achieving one goal the other frequently is also reached. The examples presented in the present section of the report are considered primarily as illustrations of efforts to lower the costs and to improve the quality of production and, as such, will be described and briefly analyzed. In Part VIII, which follows, experiments designed to provide an equitable basis of financing medical care will be considered in detail.

TECHNICAL *vs.* ECONOMIC PROBLEMS IN MEDICAL ORGANIZATION

Before describing and appraising the special economic developments in medical service, it may be useful to state certain elements of the professional and economic problems of present-day medicine which the investigations of the Committee on the Costs of Medical Care and similar studies have brought into prominence.

The organization of medical care may be considered from either the " technical " (professional or medical) or the " economic " point of view. The technical organization of medical care involves the science and the art of medical services, and its primary objective may be defined as the application of medical knowledge, without regard to cost or payment, and without regard to the public's standards of good medical care as reflected in the present effective demand. The solution of technical problems rests with students of medical science, not with the general public.

Aside from scientific procedures in treating a patient, the delivery of medical care to members of the general public requires (*a*) the expenditure of economic resources in the form of professional services and commodities, and (*b*) the use of permanent and specialized buildings and equipment. Appropriate expenditure and utilization of these resources raise economic rather than strictly medical questions, and the solution of the problems involved requires a study of the economic aspects of methods of producing and paying for medical care.

It is to an analysis of the "economic organization" of medical care—the methods of producing and financing medical services—that the Committee has addressed itself. In so far as particular types of economic organization can achieve more efficient production or more equitable financing of medical service, they should receive encouragement from the public as a whole, provided, of course, that they do not adversely affect the technical standards of medical care actually received or considered desirable.

THE INHERENTLY "PERSONAL" NATURE OF MEDICAL SERVICE

From some points of view, medical care can be considered as an economic commodity. It is purchased by those who need or desire it, and is produced or sold by persons or agencies who depend upon prices or fees for their livelihood. Society as a whole must finance the medical care which its members receive. But medical care is not merely an economic commodity, it is also a personal service involving individual relationships between a medical practitioner and a patient. There can be no substitution of one patient for another. A parent cannot bear the burden—medically speaking—of the child's case of mastoiditis, nor can an employee undergo an operation for his employer's appendicitis. The personal nature of disease and of medical care is the foundation upon which the economic organization of the past has been constructed, and must be the basis for expansion or reconstruction of the future. To ignore or deny the significance of this personal element in the economic organization of medical care would be as absurd as to overlook the laws of mechanics in the construction of a bridge.

The personal nature of medical service underlies and determines the specific technical processes of medical care for an individual patient by an individual practitioner. One result of this has been the development of an individual or personal financial relationship between the practitioner and his patient. This relationship has, on the one hand, established the custom of individual practice by physicians, dentists, and nurses. On the other hand, it has placed primary financial responsibility for medical care upon individual patients. Individual production of medical care has thus developed side by side with individual payment for medical care.

A man's sickness or injury is, in many respects, his own affair. And it is only when a patient's condition endangers that of his fellows that the public concerns itself with either the provision of medical care to individuals or the payment for such services.

SOME ECONOMIC ASPECTS OF PRESENT-DAY MEDICAL SERVICES

As previous analyses have shown, two features of present-day medicine have given rise to a need for improved medical organization—(*a*) the growth of specialization and (*b*) the increased reliance upon capital investment. In 1929, nearly one-half the physicians in the United States referred to themselves as either partial or complete specialists in the care of the sick. Medicine in this respect has followed or accompanied other types of human activity, in which specialization has resulted from an increase in knowledge and in complexity of technique.

Medical care has grown increasingly dependent upon the use of scientific apparatus and equipment involving large capital investments. The diagnostic procedures for X-ray work, for testing pathologic specimens, excretions, basal metabolism, etc., all require large capital investment in equipment, some of which can be obtained only in units much more expensive than an individual practitioner would be justified in purchasing. As a result, much of the diagnostic and therapeutic apparatus now considered necessary for good medical care is concentrated in the offices of relatively few physicians or lay technicians. An additional type of capital investment is that represented by the private offices of physicians and dentists, over and above the initial expenditure for furniture and scientific apparatus used in the treatment of patients. Most of the capital investment in the private office practice of physicians and dentists has been made by the practitioners themselves or by business men who hope to reap a financial return from their investments.*

By far the largest total capital investment in medical apparatus and equipment is that of the hospitals of the United States. These institutions contain not only the facilities to furnish patients board and room, but also the equipment, apparatus, and personnel necessary in the diagnosis and treatment of the more obscure and difficult cases. The hospital has largely replaced the home and the physician's office as the appropriate place for the diagnosis and treatment of severe disabling illnesses, although many of the less difficult cases still receive care in the patient's home. Capital investment in hospitals has for the most part been provided by the public on a non-profit basis. In general, the privilege of utilizing the investment in hospital facilities is extended to members of the medical profession for their private practice. In this way the public institution, representing as it does the entire community, remunerates private practitioners for services rendered in the care of non-paying patients. In the proprietary hospital it may be assumed that the direct gains to the hospital through the admission of patients will more than offset the benefits extended by the institution to the attending physician.†

Medical care in its professional aspects has assumed some of the characteristics of large-scale production as exemplified in modern industry. These characteristics are the division of labor in rendering specialized services and the utilization of capital investment in equipment and apparatus which may be either substituted for personal services of workers or may be used to extend the influence and knowledge of an individual practitioner. But modern medicine has not, generally speaking, taken the next step ordinarily followed in attempts to make production more efficient—namely, to develop a plan to coordinate the services of specialists with each other and with the available capital investment in plant and equipment. There is a need at the present time for better integration of the personnel and facilities used in the production of medical care.

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* Physicians and dentists in private practice probably pay annual fixed charges of about $200,000,000 in the form of rent for offices furnished by the lay public on a business basis.

† In Chapter VIII of *The Crisis in Hospital Finance*, previously cited, the authors mention the following direct and indirect economic values through hospital appointments: salaries and concessions; access to surgical facilities; opportunities to specialize; use of capital provided by the community; prestige; education.

Throughout all discussions of the economic organization of medical care, there run two threads of thought which must be woven into both the detailed procedures and the underlying policies of medical service. The first is the fact that it is more economical to prevent illness than to cure it. Some of the recent developments in medical organization, therefore, may have as their object the provision of either or both curative and preventive service. The second is the recognition of the community of interest between producer and purchaser of medical care. The best results cannot be obtained (in the long run) by either group if one exploits the services or resources of the other. Some otherwise desirable experiments have failed because of unwillingness or inability to hold this point of view. Contrariwise, special organizations, such as health or hospital councils, have been established from time to time merely to insure economic justice to all groups concerned in the provision of medical care.

CHAPTER XXIV

ECONOMIC TRENDS IN INDIVIDUAL PRACTICE

Practitioners of medicine, who deal directly with patients rather than indirectly through the medium of a medical institution, usually maintain separate offices and individual financial relationships with their patients.* The majority of these practitioners are financially independent of colleagues or of administrative superiors. However, many physicians in private practice have recognized the need to coordinate their individual services with the personnel and facilities of the entire profession, through affiliations with institutions and with other practitioners. When connected with a hospital, the physician may call upon his professional colleagues for counsel and upon the hospital staff for technical assistance in the care of his patients. In office practice, likewise, many practitioners have found that they can achieve professional and economic advantages by the employment of assistants and technicians to conserve both time and resources.

THE SHIFT TO OFFICE AND HOSPITAL PRACTICE

The outstanding economic trend in the private practice of medicine is the removal of the physician's or dentist's office from his home into a business or professional building. To an increasing extent, the patient is no longer admitted to the doctor's home for advice and treatment. Instead, the professional office has been moved to the center of retail trade, where the patient may call during a temporary absence from employment or during a shopping expedition. This development is not local; it is national. Except in the rural areas, a very small percentage of individual practitioners use only their homes for the treatment of patients. Even in towns of 5,000 to 10,000 population, most physicians are located on "Main Street" rather than in residential sections. "Physicians' and dentists' buildings" have in many cases been erected exclusively for professional offices. In Dallas, Texas, for example, nearly one-half of the 500 physicians in the city are located in one building. In Memphis, Tennessee, about 100 doctors have rented space in a building constructed by a local hospital and located near four large general hospitals.

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* The term practitioner is here used to include the physician, dentist, nurse, midwife, chiropodist, optometrist, chiropractor, osteopath, and faith healer.

In so far as the physician's time and facilities are used more nearly to capacity, this concentration of physicians in the commercial centers of towns and cities offers genuine advantages. But it is clear that the removal of the physician from his own and his patient's place of residence encourages the public to "shop around" for a physician and makes it more difficult for the physician to maintain and extend his personal knowledge of a patient's medical and family history, factors often of paramount importance in good medical care. The tendency for practitioners to maintain "downtown" offices has moreover encouraged specialization, because of the concentration of the general public at these points during certain hours of the day. However it has also facilitated the coordination of the general practitioner's services with specialists. The patient frequently need leave the physician's office and merely cross the hall to receive an X-ray examination, a dental treatment, or a laboratory test.

From an economic point of view, the separate office introduces a continuous overhead cost unknown to the practitioner of twenty or thirty years ago. It is no longer possible for the doctor's wife to answer the telephone or doorbell, or for one telephone or waiting room to serve both personal and professional purposes. The expenses of office upkeep and maintenance continue without regard to the doctor's volume of practice. Some physicians and dentists, where such arrangements are feasible, have shared waiting and examining rooms, using them at different hours of the day or on specified days of the week. Beyond this point, however, economic retrenchment appears to be impossible.

Modern life does not permit or prophesy the return of the doctor's office to his home or even his own neighborhood. To be sure, specialists in certain fields, notably pediatrics, may maintain their practice in residential districts. But even in this specialty the physician is to be found at the neighborhood shopping center, which may be a considerable distance from his home. The business man or housewife can now consult his or her physician with relative privacy in an office building, without providing a subject for neighborhood gossip.

Just as office practice has moved from the physician's home to the retail business district, so has the care of bed patients been transferred from the patient's home to the hospital. Both of these trends have opened possibilities for the development of more efficient technical procedures, as well as for the conservation of the time and resources of a busy practitioner. Some physicians have found the new arrangements economically advantageous. Others have regarded them as introducing additional financial burdens to themselves and their patients, as well as tending to minimize the individual practitioner's control over the practice of medicine. Undoubtedly the trend has brought both advantages and limitations.

JOINT UTILIZATION OF PROFESSIONAL EQUIPMENT AND PERSONNEL

In many cities groups of three to twenty physicians and dentists have reduced their overhead costs through joint utilization of office space, waiting rooms, scientific equipment, and technical and clerical personnel. For example, instead of referring all X-ray procedures and laboratory tests to other practitioners, a group of ten or fifteen physicians or dentists may pool the expenses of maintaining X-ray and laboratory personnel primarily for their own patients. Some of these informal groups may employ jointly the services of a lay business manager who supervises for all practitioners the issuance of financial statements, purchase of supplies, credit investigations, and collections.

Although the practitioners in such groups are closely affiliated in the use of personnel and facilities, each maintains individual financial relationships with his patients. Each doctor's gross income is based directly upon fees from patients for services rendered either directly or in consultation. Although some may employ younger practitioners on a salary basis, the group relationship in no way interferes with the privilege of each physician or dentist to deal individually with his patients, both professionally and financially.

Usually members of such groups are given preference when one practitioner must consult a professional colleague in the diagnosis or treatment of a case, but this preference because of contiguity disappears when some other individual specialist is better qualified for the services required. Some groups, particularly those with ten or more doctors, attempt to maintain a balance among the various specialties and in this way to make available within the group more or less complete service to the patient of any individual physician. In other instances, however, specialists of the same kind join forces in the payment of office expenses, even though they are competitive in their practice.

No data are available to indicate the number of practitioners who pool their overhead costs of office practice in the manner just described, but nearly every office building in the urban areas contains one or more such groups. In a few instances, the organization of practitioners may extend to the construction of a special building, usually adjoining a hospital, and the adoption of the name "clinic" for the group. Illustrations of this type of arrangement exist in the Grand Rapids (Michigan) Clinic, the Woodlawn Clinic in Chicago, and the Truesdale Clinic, Fall River, Massachusetts. The Woodlawn Clinic is adjacent to the Woodlawn Hospital, conducted as a proprietary institution by several members of the group. The other two "clinics" mentioned have been built adjacent to non-profit association hospitals, and the practitioners attend hospital patients almost exclusively in the nearby institutions.

A somewhat different arrangement is effected in Cleveland, Ohio, where twenty physicians rent a floor of an office building in one of the "satellite" districts near the Western Reserve University and the Mount Sinai hospitals. These physicians have remodelled the entire floor, established a central waiting room, business office, and information and record department. They have not, however, adopted the name "clinic," and do not use the same letterheads. Moreover, the numbers of various specialists are not proportioned in a manner to render a complete or balanced service. Several internists are included in the group, but there are no general medical practitioners and no dentists among the practitioners in the building.

These informal types of group practice are advantageous to the participating practitioners, and tend to conserve the time of patients who require the services of two or more specialists.

They do not, however, aid the patient who seeks a general practitioner, nor do they provide any sure method of directing patients to the physician most suitable for their treatment. Each doctor conducts his professional activities according to his own standards and—as if he were unassociated with a group—has the same economic incentive to perform as many types of professional services as possible, even though they may be beyond his capacity to do efficient work or may be of a routine nature and could be equally well performed by someone with less training or experience.

PRIVATE OFFICE PRACTICE IN HOSPITALS

An increasing number of general hospitals in the United States have encouraged and developed the use of hospital personnel and facilities by individual medical practitioners in the care of their private office cases.

Hospitals are used for the care of both private and non-paying bed cases served by the medical staffs, and, in addition, non-paying patients are frequently served by the staff members in the out-patient departments. But the independent practitioner's office cases have in the past not been eligible for the benefits of hospital personnel and facilities in diagnosis and treatment. Recently, however, the medical staffs of some hospitals have utilized the hospitals in their private office practice in various ways, such as: reference of cases for X-ray or laboratory service; use of out-patient department offices for consultations; conference with other medical staff members on different cases; actual rental (full time or part time) of office space in a hospital building.

There are in the United States about 2,000 registered hospitals owned by individual physicians, or by groups. These hospitals are for the most part small; they comprise less than 10 per cent of the hospital bed capacity of the United States. The majority of these institutions, however, contain more complete equipment than the individual physicians could maintain in their private offices. Some physicians—those financially and professionally responsible for the activities of the institution as a whole—actually maintain their private offices in the hospital building.

A number of teaching hospitals affiliated with university medical schools have in recent years provided offices which faculty members may use in the treatment of private patients. Usually these offices are separate from the out-patient department used for the instruction of medical students or interns. Outstanding examples of this arrangement are the Medical Center affiliated with Columbia University, and the hospitals of Western Reserve University.

There is a tendency for community hospitals which maintain out-patient departments to allow certain attending physicians occasionally to see private patients, either before or after the regular hours during which the various clinics are open to the public. Data accumulated by the Council on Medical Education and Hospitals of the American Medical Association indicate that nearly 1,000 institutions in the United States permit some physicians to attend private ambulatory patients in the hospitals. The nature of these privileges, with respect to the number of physicians or the types of patients, varies with the hospital extending them. However, preliminary data indicate a growing tendency for individual institutions to encourage some office practice in the hospital.*

The Duke Endowment, in drawing its model plans for small hospitals, has made it possible for local physicians to maintain their private offices in the main hospital building. Where only four or five physicians are located in a town, this arrangement also obviates the necessity of maintaining a separate out-patient department for non-paying patients, since the office practice at the hospital embraces the care of indigent patients. In a small New Hampshire town, the three physicians of the community have recently established their offices in a wing of the local hospital, paying an agreed rental to the institution for the use of the examining and consulting rooms.

A community hospital in a Massachusetts town of 3,000 inhabitants serves a rural area in which twenty-two physicians are located. Physicians in outlying villages are encouraged to take their private patients to the hospital for study, and are allowed to use the examining room without charge to themselves or their patients. None of the physicians in the area maintains an office in the institution. During the investigator's visit, a physician from a village nine miles distant was at the hospital, and received a call from his office saying that a patient awaited him there. The patient decided, at the suggestion of the physician, to come to the hospital for examination, thereby saving the need for a special trip later in case X-ray or laboratory service was necessary.

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* *Journal of the American Medical Association*, June 11, 1932, Vol. 98, p. 2073.

A less intensive type of service, though one which is becoming more common in the United States, is the arrangement by which independent practitioners utilize the pathologic and X-ray laboratories of the hospital to supplement their office facilities. An increasing number of hospitals offer such services to individual practitioners in the treatment of their patients, charging the appropriate fees either to the attending physician or direct to the patients treated. A well-known hospital in Chicago, which maintains no out-patient department, renders a large volume of X-ray service for the attending staff in the diagnosis and treatment of private office patients.

What are the advantages and limitations of this procedure from the point of view of the medical profession, the hospital, and the patient? Whether or not he maintains a special office within the hospital, the private practitioner has the advantage of continuously available professional personnel and scientific apparatus. If he actually establishes an office within the hospital, either on a full-time or a part-time basis, he gains from frequent contacts with other physicians whose judgment or services may be needed in diagnosis or therapy. The expense for office space in a hospital is lower than for equivalent facilities. Physicians can utilize common waiting rooms and office and technical personnel for their independent private practice, thereby reducing important overhead costs. Where desirable, a group of independent physicians may engage a layman to supervise certain administrative and financial details of their activities. The physicians may, if they wish, cooperate in the maintenance of case records, and may substitute for, and assist, each other during emergencies, vacation periods, or absences at professional meetings.

The hospitals also gain by a closer affiliation with the private physicians in the treatment of office patients. Personnel and equipment may be used more nearly to capacity. Technical services are maintained at a higher professional level through contact with and scrutiny by the physicians. Patients become used to attendance at a hospital and are more inclined to use its facilities when in need of bed care.

If the plan were more widely extended, the benefits of the public's investment in hospitals, whether contributed through voluntary contributions or tax funds, would be made available to a larger proportion of the community, for the private office cases of physicians are far greater in number than the hospitalized illnesses and the cases now treated in out-patient departments combined. Individual patients might save much time by consulting private practitioners in the hospital, particularly if there were need of consultation with several physicians. Moreover, a patient's personal physician could more easily coordinate the findings of the various specialists and technicians than if each were located in a separate office.

The objections to an increase of office practice in the hospital are the same as those which may be raised against coordinated practice generally. There is the possibility that physicians may be deprived of certain professional prerogatives, that the personal relationship between physician and patient may be diminished, and that the readily available scientific apparatus may encourage unnecessarily elaborate diagnosis and therapy. These dangers are, of course, also inherent in independent private practice. But independent private practice does not, in compensation for this danger, offer the patient the advantage of conserving time in the search for medical care and does not afford the physician the advantage of being able to check any commercial tendencies which might dominate the practice of other physicians or surgeons. It may be objected that there is not room at present for *all* American physicians in the existing hospital plants and equipment. The objection is a valid one and, if all physicians were immediately to apply for office space in the hospitals of the United States, they would not merely tax the capacity of existing hospitals, but would also require the construction of additional buildings.

There is little probability that private office practice will shift to hospitals with such rapidity as to embarrass hospital superintendents and trustees. Nevertheless, the centering of medical service in the hospital, which already represents an important concentration of capital investment and professional personnel, would appear to have practical advantages for physicians, hospitals, and patients. Physicians and hospitals, particularly in small communities, may usefully cooperate in the conduct of their private office practice, and hospital trustees may advantageously provide office facilities for attending physicians.

CHAPTER XXV

THE GROWTH OF PRIVATE GROUP PRACTICE *

A further stage toward the integration of medical services than has been described in the foregoing chapters is the form of organization for medical and dental practitioners now commonly referred to as the *Private Group Clinic.* The private "clinic" differs from the informal group of medical practitioners in one major respect, namely in the pooling of incomes as well as expenses of the participating physicians and dentists. The individual doctors have little or no direct financial relationships with patients. Although their personal professional relationship may be retained, each patient is the financial responsibility of the entire group; but when consultations and special diagnostic procedures are not required, one practitioner alone usually treats a given case.

HISTORY OF PRIVATE CLINICS

A few clinics have been in existence for many years (the Mayo Clinic began as a partnership in 1887 and was formally organized by 1900), but most of the groups now in existence have been formed since the World War. There are approximately 200 private group clinics in the United States, in which altogether approximately 2,000 to 2,500 physicians and dentists are associated. The majority of the groups are in the Middle West, particularly in Minnesota, Wisconsin, Iowa, and the other prairie states. There are also substantial numbers of them in the Southwest and Far West, notably Texas and California. Private group clinics are most common in the smaller cities of from 10,000 to 50,000 population, although Minneapolis, St. Paul, Dallas, and Los Angeles each contains several private group clinics with fifteen doctors or more. A private clinic is a comparative rarity in the East although Cleveland, Boston, and Richmond (Virginia) each contains well-known groups organized on the clinic basis, as do also a number of the smaller cities in Pennsylvania, New Hampshire, Massachusetts, and West Virginia.

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* The material in this chapter is essentially a digest of Publication No. 8, listed at the end of this volume.

The various private clinics are not identical in the scope of the services offered, either in the variety of specialties represented or in the types of cases accepted. Usually the groups contain both internists and general surgeons, but a large number avowedly exclude certain specialties such as obstetrics, pediatrics, orthopedics, or psychiatry. As a rule, the clinic staff attempts to provide all the varied services necessary to the diagnosis and treatment of the cases accepted, particularly the subsidiary procedures such as laboratory analysis, roentgenology, physical therapy, cardiography, and tests for basal metabolism.

A few clinics have been formed exclusively for specialized services. For example, a staff of six doctors in Memphis conducts a clinic and hospital exclusively for orthopedic work; a clinic in St. Louis limits itself to plastic surgery; and a Los Angeles group was formed in 1918 to care for industrial accident cases. The last-mentioned group has recently expanded its service to accept all types of cases.

DIAGNOSTIC SERVICES IN PRIVATE CLINICS

It is rare that a private group clinic elects to specialize in diagnosis, to the exclusion of treatment, but a well-known group in Baltimore has for some years conducted a private diagnostic clinic, accepting only patients referred by other practitioners, and referring all patients to other practitioners for treatment.

The use of clinics for diagnostic services exclusively does not reduce the costs of necessary therapy, which may involve difficult surgery or a long period of hospitalization. Moreover, at times a diagnosis cannot be confirmed without some treatment. From the patient's point of view it is impossible for a reasonable fee for diagnosis to be established, unless consideration is also given to the probable costs of treatment. The formation of clinics for diagnosis exclusively (on either a private or public basis) has been practicable only in large urban areas, where the amount of work will justify an investment in adequate scientific equipment and apparatus. Development of diagnostic service separate from organization for treatment is of problematic value. However, experience indicates that the formation of diagnostic clinics on a part-time basis or in conjunction with personnel and facilities for treatment may prove a success.

Both in large cities and in smaller communities, diagnostic services have been conducted most successfully by groups also organized for treatment, such as private group clinics or general hospitals and their out-patient departments. The part-time utilization of the facilities of such institutions for organized diagnostic work reduces overhead costs (otherwise high), utilizes a staff already accustomed to work together, and enables the diagnostic services to be carried on concurrently with, and in anticipation of, appropriate treatment.

Managers of private group clinics report that many cases are referred to them by general practitioners for diagnosis, and that the referring physician is in each case provided with a complete report on the nature of the diagnosis and the appropriate treatment. In some instances the referring physician resumes charge of the case; in others he obtains the appropriate medical attention for his patient, either at the private clinic or from some other practitioner. Every private group clinic, therefore, is to a degree a diagnostic clinic, not only for its own cases but for outside physicians as well.

Standard fees for difficult diagnosis are established by some clinics, usually at rates less than the sum of the standard fees for the several services involved. Such a policy may be regarded as consistent with that of charging for services at cost. Coordinated diagnostic services usually require less additional cost for each item of service than if they were performed separately, with extra expenses for record keeping and " taking " histories prior to each consultation or examination. Moreover, physicians may consult each other informally, with only one practitioner responsible for thorough study of the case.

The arrangements vary from fees of $5 to $10 for minor physical examinations to others which include all the necessary services of the clinic, even X-ray photography. Of 42 clinics specially studied,* 12 emphasize their diagnostic facilities by " flat rates " for a stated maximum amount of diagnostic service. Several clinics have established standard rates for obstetrical service, including all prenatal care at the clinic, attendance at the time of delivery, and treatment during hospitalization. The tendency in establishing most fees for diagnostic service is to set a maximum rather than a uniform charge. For cases requiring diagnostic services which would total less than the maximum if assessed individually at standard fees, only the standard fees are charged.

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* *Op. cit.*

It is alleged that members of private clinics have at times attempted to influence patients referred to them solely for diagnosis to use the clinic personnel and facilities for treatment also. The prospect that a patient will return to the referring practitioner for treatment or for supervision is, of course, affected by the diagnostician's tendency not only to prescribe treatment but also to designate appropriate specialists for the work. This tendency is accentuated by the inclination of many patients to regard such an arrangement favorably.

FINANCIAL ORGANIZATION OF PRIVATE CLINICS

In their practice of medicine, clinic members are usually organized into partnerships, although an increasing number are forming corporations for this purpose. As owners of plant and equipment, clinic members frequently organize separate corporations, leasing the assets to themselves as medical practitioners. This arrangement makes possible an appropriate division of earnings where the capital investments of partners are substantially different, and also permits individual physicians to assume personal responsibility for the performance of professional services.

Investment in plant and equipment owned by the medical practitioners or their corporations has usually been made by—or on the credit of—a few individual physicians. Loans have been secured by mortgages on the property and paid from the earnings of—or rental paid by—the clinics. Shares of stock in clinic property have, so far as investigation revealed, been sold only to clinic associates.

The physical features of group clinics are not unlike those of a hospital out-patient department or of an office building devoted primarily to medical care. Each clinic has one or more waiting rooms for patients, examining and consultation rooms for the use of each physician, laboratories for X-ray, pathologic, or physiotherapeutic services, minor operating rooms, and a central office for financial and medical records.

The larger clinics with fifteen or more practitioners generally occupy space in separate buildings (sometimes in hospitals), but a great many utilize space in office buildings. Most clinics do not own or operate hospitals, but depend upon close affiliation with specific institutions, already established in the community, for the hospitalization of patients treated by clinic physicians. The clinics usually own or control all medical equipment and apparatus used in the treatment of ambulatory patients.

CLINIC PHYSICIANS AND OTHER PERSONNEL

The personnel of a private group clinic may be divided into two general classes: *practitioners* and *all others*. Clinic practitioners may be further subdivided into two classes: those who share in the ownership of the clinic and participate in its profits and those who are employed on a salary basis. The ratios of owners and employed practitioners vary greatly with individual clinics.

As a rule, very few pathologists, roentgenologists, or dentists are in the owner class; conversely surgeons and internists are apt to dominate the owner group, perhaps because these physicians are the older and more experienced men. Younger physicians in the fields of orthopedics, pediatrics, and neurology, for example, tend to hold positions midway between the others mentioned. For 167 physicians who were "owners" in 34 clinics, the managers of which provided data on this point, the average number of years since graduation is 20, and for 139 employed practitioners in 29 clinics the average number of years since graduation is 8. For the dentists associated with these organizations, the average is 12.

Of 415 clinic physicians listed in the 1929 *American Medical Directory,* 337 are members of the American Medical Association. Clinic physicians join various specialists' associations to a greater extent than do independent practitioners in the same community—resulting in part from the fact that a larger percentage of clinic members are specialists than obtains in individual practice.

An important development in group clinic practice is the "business office," a separate department under a lay business manager more or less independent of the activities of individual physicians. The authority and responsibilities of the business manager are of wide range, varying from the routine tasks of bookkeeper to executive responsibility for financial policies, plans for building extension, purchase of equipment, and economic appraisal of the services of practitioners with a view to apportioning net profits or establishing professional and technical salaries. The business manager is an employee of the clinic, with duties and responsibilities determined by the clinic physicians. In the course of investigation no case was discovered in which the manager participated in determining the amount or kind of medical diagnosis or treatment to be rendered to individual patients.

METHODS AND POLICIES IN THE TREATMENT OF PATIENTS

The practice of private group clinics involves office consultations, and such diagnosis and treatments as do not require hospital " beds " or board and lodging for patients while they are being treated. Clinic patients requiring hospitalization are treated with the aid of apparatus and equipment at the hospitals, just as are the patients of independent practitioners.

Private group clinics, as a rule, maintain " minor operating rooms " at the clinic offices, but rely entirely upon separate hospital facilities for major surgery. The office hours of individual clinic practitioners are similar to those of independent physicians in the same specialties, but the clinic offices are usually open for seven or eight hours daily, with special provision for night and holiday service. Most private group clinics provide for " house calls " and " night calls " by clinic physicians, and for this purpose tend to use the services of the younger members.

Clinic managers report that many patients request and receive the services of specific practitioners, particularly at the first call to the clinic offices, and that the " family doctor " relationship between physician and patient is maintained or encouraged. Most of them arrange to have an individual physician responsible for coordinating and directing the medical service to each patient. Usually this practitioner is the one whom the patient first consults. Clinic physicians call freely upon their colleagues in the diagnosis or treatment of obscure or difficult cases.

The practice of the typical private group clinic is essentially " local," with a large number of the patients drawn from neighboring towns, although individual physicians, and a few clinics, may attract patients from great distances. The majority of patients served in private group clinics, in the opinion of the clinic managers, are persons of moderate means, with a considerable number who might be classed as well-to-do, and a few others who are very poor.

Clinic physicians appear to be " on service " in non-profit and local government hospitals on the same basis and to about the same extent as would a similar number of independent practitioners. None of the clinics owning hospitals conducts a separate out-patient department for charitable work, but each gives such services directly in the clinic offices.

FINANCIAL RELATIONS BETWEEN CLINICS AND PATIENTS

The fees in a private group clinic are fairly uniform for services involving the use of medical equipment and apparatus. Fees vary greatly, however, for services which depend primarily upon the counsel or skill of a practitioner. Individual practitioners have a voice, but usually not the final one, in the establishment of the fees charged to patients of the clinic. It appears that clinic physicians generally prefer as little financial dealing with patients as possible, usually leaving such matters to the business office and the lay employees. On the other hand, the wishes of doctors are, as a rule, respected with regard to the establishment of fees, particularly when reduction of charges is recommended for personal or professional reasons.

Credit investigations, which are a regular clinic procedure, are carried on for two reasons: (*a*) to obtain information as a basis for establishing a fee where there is a question of the ability of a patient to pay the usual charges; (*b*) to guide the collection policy after services have been rendered. Both the amount of the fee and the method of collection are based upon data obtained through conventional credit information channels. Private group clinics obtain information to a greater or lesser extent from local credit bureaus, " blue-books," reports of national rating agencies, banks, and commercial creditors. Some of them merely interview the patient, requesting data as to his occupation, income, resources, family responsibilities, etc. Collection procedures of private group clinics resemble those of business enterprise, in that reasonable efforts are made to enforce collection of fees. Clinics rarely resort to legal measures to obtain settlements of accounts.

According to the statements of forty-two clinic managers, clinic fees appear to be regarded by the general public as neither higher nor lower than those charged by local physicians in private practice. Twenty-one managers say that in their opinion fees in their clinics are " about the same " as those of independent practitioners; eight state that they are "higher," and thirteen that they are " lower."

The average total fee per patient in fifteen clinics (whose managers answered a question on this item), serving 60,000 different patients in 1929, was about $35. Average fees in the several clinics tend to vary directly with the percentage of patients hospitalized, and with the number of office visits.

REMUNERATION OF CLINIC PRACTITIONERS

Remuneration of clinic members may be considered as of two kinds: (*a*) designated salaries or drawing accounts; (*b*) shares in the net profits. These two types of remuneration merge in practice, and it is often impossible to distinguish the earnings which a clinic member receives as a professional employee, from those accruing to him as an owner in the enterprise. The history of several defunct clinics shows that frequently the cause of dissolution has been the difficulty of establishing a satisfactory basis for distributing the clinic's net income.*

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* At the annual meeting of clinic managers in 1932, one of the authors of this volume interviewed at length the manager of a private clinic the physicians of which have reverted to private practice on an informal basis in the same clinic building. About three years ago, a young physician was employed on a salary to assist one of the partners who wished to shift his professional energies from obstetrics to urology. The salaried physician soon developed a personal following among the clinic patients, demanded a substantial increase of income, and, upon being refused, resigned his position to enter private practice in the city. Meanwhile, one of the surgeons, who was sharing income on a par with six other partners, decided that he would fare better during " hard times " by practicing independently. Other members concluded that the equal division of income, established for seven practitioners in 1920, was no

Clinic practitioners vary greatly in the personal and professional attainments which produce large incomes. Data were obtained with respect to the average gross and net incomes of the associates in twenty-seven clinics which range in size from three to twenty-two members and which received from $34,000 to $386,000 as gross income from services to patients. The average amount of clinic gross income per practitioner for the 314 members was approximately $15,000; and the average clinic net income per practitioner was approximately $9,750.

The ratios of operating expenses to cash incomes of clinics seem to justify the conclusion that at least some of the relatively high average net incomes of clinic practitioners result directly from savings in operating expenses. The average operating costs of private group clinics, including salaries of nurses, lay technicians (for X-ray, laboratory, and physical therapy), and office staff, as well as rent, heat, light, travel, research, and liability insurance, are about 30 per cent of gross income. Since many of these expenses would not be incurred by independent practitioners, the ratio of operating costs to patients' fees would be about 20 or 25 per cent, as compared with 40 per cent for similar items of expense in independent practice.

Whether these savings have also resulted or should result in lower fees to patients cannot be answered at this point. Clinic members maintain that they have reduced the costs of medical care to the public by improving quality without increasing fees, by reducing fees for equivalent services, or by conserving the patients' time during the period of diagnosis and treatment.

CLINIC SUBSTATIONS IN SMALL TOWNS

A private group clinic in an urban area of 100,000 inhabitants in Iowa three years ago established a general practitioner in a town of 3,000 population twenty-five miles from the clinic offices. This general practitioner, who succeeded a

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longer equitable in 1931. Rather than attempt an adjustment of the proportions of income received by the seven partners, two important members withdrew from the group, and the clinic was dissolved. Most of the twelve physicians who composed the group continue to maintain their offices in the specially constructed clinic building, and each doctor pays an agreed amount for rental and for the services of the business office.

physician who had retired, is paid a salary by the clinic, and engages in private practice on a fee basis. Fees are established according to the customs of the community and the patient's estimated ability to pay. Difficult cases are referred to the specialist at the clinic offices who either visits the general practitioner at his local office or treats the patient in the urban clinic or in a hospital.

Since the first substation of the clinic was established three years ago, six others have been instituted in the small towns surrounding this metropolitan area. The local practitioners maintain in their offices laboratories for blood and urine tests, small stocks of standard drugs, and the usual equipment for simple examinations and treatments. Detailed case records are kept for every patient and these records are checked by the clinic specialists whenever a case is referred to them for treatment.

All the practitioners are young men, none of them more than thirty years of age. These rural general practitioners consider their training in towns and villages as apprenticeship for transfer to larger communities and look forward to their own replacement by younger physicians. Several of the general practitioners are interested in medical specialties and have to a greater or lesser degree laid the groundwork for specialization and participation in the work of the central clinic.

This clinic substation arrangement suggests one solution of the present-day dilemma of medical practice in rural areas where too often the residents have been forced to choose between a young, inexperienced, and unsupervised physician and a very old practitioner unacquainted with modern advances in medical diagnosis and treatment.

The economic aspects of this arrangement may commend themselves to other communities. On the professional side the continued contact with a group of specialists should tend to spur the young general practitioner to a high type of medical service not only because his work is continually supervised and appraised, but also because he is given an opportunity for promotion and advancement if his work is satisfactory.

ANNUAL MEDICAL SERVICES BY PRIVATE GROUP CLINICS

Group practice is merely a device capable of improving service and lowering the costs of producing good medical care. It does not touch the patient's problem of obtaining funds with which to pay his medical or hospital bills, nor does it insure that the economies due to group organization will be passed on to the patient in the form of lowered charges. It may, however, provide a foundation on which financial advantages to patients can be constructed. In fact a number of private clinics have entered into agreements with groups of employed persons or other groups for treatment to members on the basis of fixed, periodic payments. These contractual arrangements will be described in Part VIII.

GENERAL OBSERVATIONS CONCERNING PRIVATE GROUP CLINICS

The present chapter summarizes a few of the general facts incorporated in a more complete report on private group clinics.* It appears fitting, therefore, to quote the conclusions set forth by the author of the original report:

I. Group clinics are in direct economic competition for the medical service which constitutes the major portion of the practice of independent practitioners. Accordingly, but few independent physicians utilize the clinic facilities in treating their cases, unless they are engaged in specialized practice not carried on by the clinic.

II. The economic success of group practice depends upon the degree of utilization of the capital investment and of the time of the individual practitioners. The medical service of a clinic cannot usually be adjusted to the convenience of a patient as easily as can the services of an independent practitioner. Where, however, a patient requires the services of several specialists he can probably obtain treatment with less inconvenience and expense at the office of a clinic than from separate practitioners.

III. The members of private group clinics generally make an effort to maintain a personal relationship between physician and patient. Where such a relationship has not been fully maintained in group medical practice, an attempt has been made to compensate for it by means of economies of time and resources, and the increased use of professional services and facilities.

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* See Publication No. 8, listed at the end of this volume.

IV. The volume of medical service carried on by a private group clinic makes possible the establishment of a specified maximum fee for difficult individual cases and for complete annual service to groups of patients.

V. Clinics have in general provided net incomes and working conditions for physicians which make possible the continued development of group practice. The removal of financial and administrative responsibilities from the individual clinic practitioner has made him more completely available for professional service, and has, in some clinics, increased his opportunities for scientific research and development.

VI. The employment of business managers has usually resulted in increased administrative economy and efficiency. The establishment both of fees and of collection policies is based upon financial data obtained through conventional business methods. Inasmuch as the financial status of a clinic patient is usually investigated, group clinics probably perform less "free service" than would an equal number of independent practitioners doing the same volume of work.

VII. Private group clinics, through their available equipment and their coordination of medical specialists, are in a position to fulfill the basic requirements of good medical care with economies from which either or both the clinic members and the public may benefit.

CHAPTER XXVI

NON-PROFIT ORGANIZATION OF PROFESSIONAL SERVICES

The various forms of professional practice previously described have all been organized on a strictly private or proprietary basis. Individual physicians and groups have relied exclusively upon fees for services rendered to provide their incomes and livelihood. This chapter deals with recent developments in public sponsorship or regulation of medical and dental services as well as hospital care.

PROFIT AND NON-PROFIT MEDICAL SERVICE CONTRASTED

Throughout the experience of each individual practitioner there comes the occasion and demand for services for which the patient cannot pay. The practitioner may perform this work in his office or in a public clinic or in a hospital out-patient department. In any case, the result is the same. The patient either pays nothing toward the cost of his care, or merely pays an amount sufficient to reimburse the practitioner or agency for supplies used and a proportion of the costs of other personal services. The practitioner is not paid for his professional services either by the patient or by the institution.

In the out-patient department or non-profit clinic one observes the external features of group practice in the coordination of professional personnel and facilities. In contrast to the private clinic which is organized and conducted by a group of private practitioners, the hospital out-patient department or independent public clinic is organized and supported by the general public through a board of trustees. Whereas for the private clinic fees are the sole basis of support and the source of all the earnings of the physician or dentist, in most public clinics fees are a negligible source of income to the physician or dentist.

The services of the public clinics have, supposedly, been limited to patients who could pay no fees or merely such fees as would suffice to meet operating expenses, excluding all allowances to physicians or dentists. Patients who were able, individually or in groups, to pay fees sufficient to provide a residue for physicians or dentists after payment of operating costs, have been excluded from admission and have thus found it necessary to seek the services of practitioners in their private offices and to effect such financial arrangements as were considered appropriate by either practitioner or patient or both.

The distinction between organized and non-organized medical practice does not apply merely to office practice. It is equally applicable to physicians' services in hospitals. The staffs of the out-patient or in-patient departments of hospitals usually receive no pay from their service to out-patients or to " ward " patients. The usual public clinic principle—the principle of paying everyone except the physician or dentist—has not been limited to the provision of ambulatory care. The attending medical staff of hospitals has been expected to serve the "public ward" patients without fees, even though the patient may pay all or a part of the scheduled charges for his hospital service. Patients who were able or desired to pay fees to attending physicians—regardless of the amounts—were often compelled to engage more expensive hospital accommodations than those in the wards, with the result that payment of the physician's fees became extremely difficult if not impossible.

THE "PAY CLINIC" PRINCIPLE

The patient in the "non-profit clinic" or "public ward" is often estopped by institutional by-laws from paying his physician or dentist. This same patient, when transferred to a private office or private ward, may be prevented by economic incapacity from paying a fee sufficient to cover more than the practitioner's professional expenses or the hospital's operating costs.

To meet this dilemma has arisen the idea that medical service to persons of limited means might be provided for groups who were able conjointly to pay all the costs of their medical services, including moderate amounts to attending physicians or dentists. Accordingly some of the public clinics, many of which have gradually increased their admission and treatment fees, have organized all or a part of their professional services on a full-pay basis. The practitioner's payment is limited, but is guaranteed by the sponsoring organization. Likewise patients unable to pay the established fees are referred to public clinics where they may apply for services at lower rates.

Pay clinics have not all been organized on the same basis. Some of them, like the Cornell Clinic in New York City, have offered all types of medical service except that rendered in a hospital. The University of Chicago Clinics staff, however, extends its services to hospitalized as well as ambulatory cases. Other clinics have limited their services to certain specialties, such as dentistry, neuropsychiatry, or the treatment of venereal diseases or cancer. Still others have specialized in such services as consultation, health examination, or the diagnosis of obscure and difficult disorders. Not all " pay clinics " have been entirely self-supporting from patients' fees. Some have required annual contributions from official or voluntary sources; others have gained from the avoidance of payments for taxes, interest, and depreciation. A few institutions have been more than self-supporting, to the extent that a surplus has been accumulated, practitioners' salaries have been increased, or patients' fees reduced.

The " pay clinic " principle assures to patients the economic and professional benefits of group practice, and guarantees to attending practitioners adequate but limited payment for their services. The significance of the principle justifies further illustration of the scope and procedures of specific types of projects as well as citation of the advantages and limitations of some of the policies which have been applied.

" General " Pay Clinics.—The best-known and most extensive " pay clinic " in the United States is the Cornell Clinic, New York City, established November 1, 1921, by Cornell University Medical College. This organization, originally conducted as a " charity clinic," serves as a unit of the university for the instruction of undergraduate and graduate medical students.

The Cornell Clinic has been in continuous operation for nearly eleven years. After the first two and one-half years of operation * patients' fees have sufficed to pay all operating costs, including payments to physicians and dentists and replacements of scientific equipment, but not allowances for interest and depreciation on the capital investment in buildings owned by Cornell University.

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* Compare *The Cornell Clinic, 1921-24* (The Committee on Dispensary Development, New York, 1925).

The number of patients' " visits " increased annually until 1928 and approximately 140,000 have been made each year thereafter. For the year ended July 30, 1931, a total of 137,000 visits provided a revenue of $324,000 and involved expenditures of $315,000. Of this latter amount, $110,000, or approximately 35 per cent, was paid to physicians and dentists. Practitioners are remunerated according to their responsibility and the time devoted to service, with payments ranging from $5 to $7 per session of one or two hours.

The average fee for consultations or treatments by physicians is $1.50, but special charges are made for certain drugs, for dentistry, X-ray, eye-glasses, and laboratory analyses. A cost analysis reveals that some departments, notably X-ray, pharmacy, and the laboratory, yield revenue in excess of the apportioned expenses, whereas all other departments (except dermatology) involve expenditures greater than the income from patients' fees. The clinic as a whole, however, is self-supporting so far as its operating expenses are concerned.

The services have been limited to patients from families of small or moderate means, eligibility being determined by such factors as probable duration and cost of treatment, probability of full recovery, amount of annual income, and size of family. During the first ten years of the clinic's activities, several studies were made by disinterested persons to determine to what extent, if any, Cornell Clinic patients could have afforded similar services from individual practitioners in the metropolitan area. It was revealed that, whereas a very small proportion (possibly 1 or 2 per cent) of the patients might have been able to procure needed care on a private basis, the majority were paying fees which yielded larger amounts to the attending staff than would have been available to the medical profession under other auspices.

The Cornell Clinic does not provide for medical attendance of hospitalized illnesses, nor for home care except in so far as medical social workers may investigate and attempt to influence home conditions. In the former respect, the Cornell University Clinic is in contrast with the University of Chicago Clinics which treat patients either in the Max Epstein Dispensary or the Billings Memorial Hospital or other institutions in the University of Chicago group.

The University of Chicago Clinics differ from the Cornell Clinic also in that the former accept patients above the " pay clinic " economic level, as well as a number of " part-pay " and free cases. Service by physicians and dentists to ambulatory patients is provided exclusively by full-time members of the medical school faculty, a portion of whose total salary is charged against the operating budget of the dispensary. The fees for " pay clinic " patients are $3 for the first visit and $1.50 for subsequent visits. Special charges are made for services such as dentistry, X-ray, certain laboratory tests, and for drugs, cardiography, and eye-glasses. The published financial reports of the University of Chicago Clinics do not permit an estimate of the degree to which the various out-patient or in-patient services are self-supporting from fees. The experiences of the institution illustrate, however, a non-profit organization in which the economic benefits of group practice in medical care are combined with an extensive program of education and research.

To the extent that the University of Chicago Clinics accept patients who pay fees above the " pay clinic " level, they compete with the independent practitioners of the metropolitan area. The procedure has been defended, however, on the grounds that the acceptance of patients is regulated by the teaching and scientific value of the case, and that the economic benefits to the institution do not accrue to private physicians or lay individuals. The institution as a whole is forced to rely upon both endowments and voluntary contributions for its financial support.*

Other " general " pay clinics have been established in various parts of the country, but most of them rely upon patients' fees for only one-half or less of their financial support or are satisfied to collect merely the costs of non-medical salaries and of supplies, without remunerating practitioners. Mention should be made, however, of the Union Health Center in New York City, which maintains a general medical and a dental clinic, in both of which patients' fees provide approximately 60 per cent of the total costs, including allowances to physicians and dentists. The services of the Union Health Center are intended primarily for members of labor unions which contribute the remaining amount needed for its support. Regular fees of $1 per visit are charged with very low special charges for such items as drugs, X-ray, and physical therapy. A staff of eight physicians is engaged, with a medical director, a pathologist, and a young internist on a full-time basis. Other physicians are paid agreed rates for their work, ranging from $4 to $6 for one- or two-hour sessions. The center has been in operation for eight years and receives annually about 25,000 visits in the medical department, and a larger number in the dental service.

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* The University of Chicago Clinics recently instituted a plan for providing medical care to employees for fixed, periodic payments by the eligible persons. This will be referred to later in the discussion of examples of " payment " for medical services.

Pay Clinics for Specialized Treatment.—The "pay clinic" principle has been applied on a limited scale by a number of public clinics in the United States, with special fees charged for certain services. In some instances, the practitioners are remunerated on a fee basis, and in others on an hourly basis. Some of the clinics have conducted their services without payment to practitioners. Among the best-known pay clinic arrangements are those at the Central Free Dispensary in Chicago, the Lakeside and Mt. Sinai hospitals in Cleveland, the Brooklyn Hospital, the New York Hospital, and the Boston Dispensary.

The most common type of specialized pay clinic is for the treatment of venereal diseases. Usually these clinics are conducted during the evenings, in order to serve employed persons. The outstanding example of a pay clinic for venereal diseases is the Public Health Institute of Chicago. This institution, founded in 1923, employed in 1931 a staff of over twenty full-time physicians and received more than 200,000 visits. The clinic was financially sponsored by a group of Chicago business and professional men, but from the first has been entirely self-supporting, although the fees charged are considerably lower than are current among private practitioners. No restrictions are placed upon the economic status of patients eligible for treatment, except that patients unable to pay the established rates are referred to charity clinics, to which the Public Health Institute has contributed several times from the accumulated surplus of its own operations. A special study of the economic and social status of an unselected sample of Public Health Institute patients revealed that most of them would have been unable to pay for equivalent care at private rates.*

Pay clinics have also been instituted in other fields at various hospitals or public clinics. The services have, for the most part, dealt with obscure or difficult diseases requiring extensive diagnosis or continued treatment, such as neuropsychiatric conditions or arthritis. There appears to be a tendency for specialized pay clinics to be introduced in many hospital out-patient departments throughout the United States. Many of the pay clinics are built around the services of one practitioner; but others represent the policy of an entire medical staff or board of trustees. Where services in a single department have first been offered on a " pay clinic " basis, not uncommonly other specialties have later been organized in a similar manner.

A unique type of specialized pay clinic is that providing health examinations. Five well-known hospitals (in addition to the Cornell Clinic) in the metropolitan area of New York City offer health examinations of supposedly well persons for fees of $5 to $10, including complete physical examinations, routine urinalyses, and blood, dental, and other examinations as indicated. In three of the clinics the entire examination is completed during one visit to the clinic; in the other three institutions two visits are required for the various procedures. A large number of the health examinations are conducted in connection with new employment of life insurance, but in increasing proportions are being requested and paid for by individual patients. The participating physicians are paid according to various methods, such as monthly allowances, specified amounts per session, or pro-rated portions of the total receipts from patients. In two of the health examination clinics the physicians are not paid for their services.

Pay Clinics Exclusively for Diagnosis.—Because of the high cost frequently attendant upon the diagnosis of obscure illnesses, some hospitals and public clinics have established "pay clinic" service for consultation or diagnostic cases. The method of organization has not been the same for all groups. At the Cornell Clinic, the consultation service is merely a part of the general pay clinic, and the attending staff performs its work for the "diagnosis" cases concurrently with that for others admitted for less complex services. In other instances, the hospital staffs are specially organized for the diagnostic service, utilizing the out-patient department at special hours. This procedure is followed at the Mt. Sinai Hospital and Vanderbilt Clinic in New York, the Massachusetts General Hospital in Boston, and the Michael Reese Hospital in Chicago.

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* *The Economic and Social Status of Patients of the Public Health Institute of Chicago,* by Bernard Regenburg (The Julius Rosenwald Fund, 1931).

A few diagnostic pay clinics are established in quarters separate from those of the main organizations, and member physicians serve at stated days and hours each week. This arrangement is followed in the Research Hospital Diagnostic Clinic at Kansas City, and in the Pittsburgh Diagnostic Clinic.

The Diagnostic Clinic in Kansas City was organized in 1924, with a full-time medical director who also serves as pathologist for the Research Hospital. The funds for building and equipment were supplied by a local philanthropist, who has also regularly contributed to the maintenance of the service. Except for the fiscal year ended June 30, 1929, the diagnostic service has never been entirely self-supporting. The participating physicians are paid specified amounts per session of service, regardless of the earnings of the clinic from patients' fees. A complete diagnosis is provided at rates from $25 to $50, regardless of the nature of the disease or the number or types of diagnostic procedures utilized. The variation of fees is based upon an estimate of the patient's ability to pay. The clinic physicians provide no treatment for patients who receive diagnoses, unless explicitly requested to do so by the referring practitioners. Written reports of findings are provided by the clinic medical director to referring practitioners. More than one-half of the practitioners in the Kansas City metropolitan area have referred cases to the Diagnostic Clinic, but most of them send only one or two cases each year. A large proportion of the cases, nearly one-third, are referred by practitioners in neighboring towns and villages. During the five-year period from 1927 to 1931, inclusive, the following numbers of patients were admitted during the respective years: 1,109, 988, 1,205, 955, 848.

The Pittsburgh Diagnostic Clinic occupies rented office space, separate from a hospital, but operates its service otherwise on a basis similar to that of the Kansas City organization. Physicians are paid according to hours of service and number of cases. The minimum fee for a diagnosis is $75, but other charges may be made for additional services. No limit is set with regard to the economic status of patients eligible for the benefits of the clinic, but every case must be referred by a physician who feels that the patient's medical needs and financial condition justify his acceptance. Regular sessions were held during the three-year experimental period, 1929 to 1932, and the business affairs were managed by a layman. The clinic has relied for financial support upon a philanthropic foundation, and has received from one-fourth to one-third of its funds from this source.

The consultation service at the Cornell Clinic is arranged so that a flat fee of $10 pays for a complete physical examination, a urinalysis, a Wassermann test, and a complete blood count. Limited fees are charged for all additional services, except consultations with the various specialists. Reduced rates are assessed for laboratory tests, X-rays, cardiography, and tests for basal metabolism. Physicians serving consultation cases are remunerated according to an established fee per session. Patients are accepted only on reference of independent practitioners, and they include each year approximately 20 per cent of the new admissions to the clinic—about 2,500 cases in 1931. The consultation service has been offered since 1922.

At the Vanderbilt Clinic in New York City a complete diagnostic service is offered at a maximum flat fee of $25 per case. The services include all necessary examinations and tests, regardless of number or type. Patients may be accepted on direct application or on reference from a physician. The entire medical staff resources of the public clinic of the Columbia-Presbyterian Health Center are available to the consultation case, the $25 limit serving as a maximum fee for any patient who requires diagnostic procedures. The participating physicians are not remunerated for their services, and no attempt is made to determine whether the service is otherwise self-supporting.

In November, 1931, a somewhat different organization for a self-supporting consultation service was instituted at the Mt. Sinai Hospital of New York City. The project was initiated as a cooperative venture of the attending medical staff, and after three months' experience was reported as holding promise of success. A complete diagnostic service is provided at a flat rate of $35 per case. Patients are accepted only on explicit reference by a physician, and a written report is provided each referring practitioner. No treatment is conducted during the consultation service or by the participating physicians except under separate and distinct arrangements for such service. The first 350 patients accepted were referred by 265 physicians, most of whom sent but one case for the consultation service. The medical benefits are limited to patients of moderate means, as determined by the referring physician and the hospital social service staff.*

Dental Pay Clinics.—The field of dentistry is particularly adaptable for the application of the pay clinic principle, because of the "elective" nature of the services from the point of view of time and because of the uniformity and interchangeability of the necessary equipment. Accordingly there have developed a number of self-supporting dental clinics in the United States.

Two of the best-known dental pay clinics are in New York City: the Dental Health Center Service, Inc, affiliated with the New York Tuberculosis and Health Association, and the Dental Department of the Union Health Center. The former engages ten part-time dentists and seven other persons on a full-time basis with receipts from patients amounting to $30,000 in 1931. The latter is much larger, and received $86,000 for 39,000 visits in 1931. The larger clinic employs a full-time director of dental services, twenty-one part-time practitioners, and a staff of ten assistants and technicians. Both clinics have been conducted continuously for more than five years and earn their operating expenses.

The fees of the dental clinics are lower than the fees ordinarily charged by private practitioners. As illustrative of the rates, the following charges in one clinic may be cited: prophylaxis, $1.50; complete mouth X-ray, $4; amalgam fillings, $1.50 to $3.50; inlays, $8 to $12; extractions, $1 to $1.50; root-canal therapy, $8 to $15; orthodontia appliances $50, treatment, $15. Sessions are held twice daily in both clinics, with evening sessions regularly each week. A large part of the work in each clinic is of the type involving continuous and otherwise expensive treatment, as may be observed from the ratio of total visits to new patients in 1931. In one clinic the ratio of total visits to new patients was 9 to 1, in the other more than 12 to 1.

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* *Cf.* "A Consultation Service for Patients of Moderate Means," by George Baehr, M.D., *Journal of the American Medical Association,* June 11, 1932, Vol. 98, p. 2159.

The total number of pay dental clinics in the United States, using the criteria of public auspices and complete support from patients' fees, cannot be accurately estimated. It is known, however, that a number of the general public clinics charge fees approximating the rates of the organizations just described. Moreover, some groups of private dental practitioners accept large numbers of patients at limited fees, although higher rates will be charged those able to pay them.

A study by the American Dental Association * defined a " clinic " as any institution in which a third party (institution, organization, or agency) intervenes in the financial relationships between the dentist and the patient under treatment. It was estimated that there were more than 2,800 dental clinics in the United States and data were obtained directly from 1,530. Most of these clinics were conducted under the direction of government agencies or hospitals, and by far the greater number were in cities of 25,000 or more population. Financial data concerning the bases of support or fees charged in dental clinics indicated that an appreciable number were conducted on a " pay clinic " basis in 1930.†

THE PAY CLINIC PRINCIPLE APPLIED TO BED PATIENTS

A hospitalized illness is always expensive, and is usually unexpected. It requires expenditures for institutional maintenance, the specialized services of physicians, and frequently care by a private duty nurse. From the patient's point of view,

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* *A Study of Dental Clinics in the United States, 1930,* Miriam Simons Leuck (University of Chicago Press, 1932).

† *A Further Study of Dental Clinics in the United States, 1930,* Miriam Simons Leuck (University of Chicago Press, 1932).

the hospitalized illness requires absence from gainful employment and the adjustment of family conditions. Moreover care in the hospital very often follows a period of unsuccessful treatment, during which financial resources may have been exhausted. The costs of a hospitalized illness are not the concern merely of the hospital administrator or the patient and his family. The attending private physician or nurse who relies upon professional services for a livelihood, and the general public—which must in the long run pay all bills not met by the direct beneficiaries—are equally involved.

For the reasons cited above, the costs of hospitalized illnesses have been—and rightly so—the subject of special study by professional practitioners, hospital administrators, and students of medical economics. About one person in each sixteen is hospitalized each year for the treatment of acute illnesses, yet the hospitalized persons as a group pay nearly one-half the total fees paid annually to physicians, hospitals, and nurses. The average cost to a patient for a hospitalized illness is probably about $140,* an amount of the first order of importance for persons of limited means, particularly when the cost is incurred unexpectedly and without regard to financial ability.

Irrespective of any scheme for aiding patients to obtain funds—individually or jointly—for financing hospitalized illnesses, special attention has been given to the possibility of reducing the total costs to patients of limited means, without requiring any grants of charity on the part of the hospital, practitioners, or general public. A plan, sometimes referred to as the middle-rate plan for hospital patients has been instituted in a number of hospitals in the United States.†

The middle-rate plan aims to accomplish for the total costs of a hospitalized illness what the pay clinic does for the costs of services by medical or dental practitioners. The plan limits the fees charged for services, but establishes them at levels sufficient to pay the hospital costs, as well as to remunerate the attending physicians, surgeons, and nurses. The objective is achieved not so much by internal administrative efficiencies as by a coordination of all financial relationships with patients on the part of the hospital, physician, and nurse. The total costs are the object of consideration, and an effort is made to establish the combined expenses at a level which can be paid by the patient or his family. Physicians' fees are determined by a schedule according to type of medical service; private duty nursing is permitted only when requested by the physician, and patients must utilize the medium-priced hospital accommodations, except in cases of medical necessity. The hospital likewise provides special diagnostic services at reduced rates sufficient merely to cover estimated pro-rata costs. The limitation of fees indicates that the middle-rate plan is applicable primarily to persons of limited means.

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* *Cf.* Chapter VI of this volume.

† See Publication No. 4, listed at the end of this volume.

The practical application of the middle-rate plan requires that patients be admitted only if they can pay the fees established. It does not involve public charity, although there is no fundamental reason why a portion of the hospital costs or the physicians' or nurses' fees could not be paid or guaranteed by philanthropy or taxation. The best-known middle-rate plan, in operation at the Baker Memorial Unit of the Massachusetts General Hospital, Boston,* relies upon general hospital endowment and voluntary contributions to cover the costs of the hospital services, but not the fees for physicians or nurses. It is expected, however, that the hospital will ultimately be entirely supported by fees from the patients served. The middle-rate plan for coordinated fees was introduced with the opening of the Baker Memorial unit of 300 beds in March, 1930. Other hospitals, such as the Mt. Sinai and Sydenham hospitals in New York City, have established the middle-rate plan in existing buildings, and have conducted the scheme side by side with the acceptance of cases for " charity " service, or on a strictly independent basis so far as physicians' and nurses' fees are concerned.

During the first year's experience at the Baker Memorial Hospital (March 1, 1930, to February 28, 1931), 2,476 patients were accepted, whose combined fees sufficed to meet 74 per cent of the hospital operating costs of the institution. During the second year, ended February 29, 1932, there were 3,326 patients, whose hospital fees covered 81 per cent of the hospital operating costs, including depreciation on apparatus and equipment, but not on the building. During the first year, fees of $147,000 were paid to attending physicians; during the second year, $210,000.

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* *The Middle-Rate Plan for Hospital Patients: The First Year's Experience of the Baker Memorial Unit of the Massachusetts General Hospital, Boston,* C. Rufus Rorem (The Julius Rosenwald Fund, Chicago, 1931).

The services at the Baker Memorial Hospital are limited to " persons of moderate means." Both medical staff and hospital authorities have refrained from giving an arbitrary definition to " moderate means." They have considered each case on its merits, having in mind such factors as: probable total costs of the illness for hospital care, medical attention and special nursing required; previous costs for the present or other illnesses; total family income and previous savings as well as other income from employers, insurance agencies, or relatives; other family liabilities; time for recovery and probable future earning capacity. If it is estimated that the total fees at the Baker Memorial are within the financial capacity of a prospective patient he is accepted for treatment. If he is able to pay higher rates without undue economic hardship, he is advised to make other provision for his hospitalization.

The scheduled range of fees for each type of medical service is determined by the attending staff in consultation with the hospital authorities. Fees for a particular case are determined in the same manner, yet final authority rests with the admitting office and medical director. The patient is presented with a single bill for hospital and professional care. All bills are collected by the hospital, which in turn transfers the agreed fee to physician or nurse.

The experiences of the Baker Memorial indicate that the patients applying for admission tend to be those previously treated in " public wards," rather than those accustomed to service in private rooms. There is but slight tendency for the well-to-do to request admission to the hospital. Physicians are not asked to serve any patients free of charge, although they remit a certain number of fees on the basis of professional or family courtesy. The testimony of both hospital and attending staff indicates that each group has profited financially through the coordination of fees to patients, while at the same time the total costs per case have been lower than the amounts charged on a private basis. Most bills are paid in full, so that the lower average charge to patients yields higher average and total collections than is the case when physicians charge widely different amounts to patients.

The coordination and reduction of total fees do not do more than touch the problem of payment for medical services. A 10 or 20 per cent reduction in the costs of a hospitalized illness is of no significance to the person who cannot pay even 10 or 20 per cent of the amount charged. The middle-rate plan is for people able to pay limited amounts, and not for subjects of medical charity. It does not remove completely the unevenness of the burden of illnesses.

The essence of the middle-rate plan is the coordination of fees, not the price level of the various services. The plan could be adopted for well-to-do patients, as well as for those of limited means.*

ORGANIZATION OF NURSING SERVICE

Nurses ordinarily work by the day or week, even though many patients may need their services for only an hour or two each day. Consequently many potential patients for nursing care, faced with the dilemma of either engaging a nurse by the " day " or foregoing the needed service, have elected to do the latter. As a result both the nursing profession and the general public have failed to gain the greatest benefits.

Some moves have been made recently toward group practice in the field of private duty nursing, both through " group nursing " in hospitals and through nursing in homes on a " visit " or " hourly " basis. The organization of nursing has paralleled in some respects the coordination of specialists among medical and dental practitioners, in that the nurses may be specially qualified in the care of maternity, pediatric, or mental cases, or in public health activities. The primary function of the nursing organization, however, is to permit one nurse to serve a number of patients, rather than to enable several nurses to concentrate their knowledge and skill in the treatment of one case.

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* The middle-rate plan was instituted and carried out over a twelve-month period at Keokuk, Iowa, in two hospitals. Keokuk is a city of 25,000 inhabitants and the plan was regarded as successful from the point of view of the two hospitals and the physicians who utilized the plan. It was discontinued, however, by advice of the respective attending medical staffs because of controversies which arose among the members. The opposition to the plan came primarily from physicians who had not utilized the middle-rate arrangements in the care of their patients. (See *The Middle-Rate Plan for Hospital Patients; A Year's Experiment in Keokuk, Iowa,* by Mary Ross, The Julius Rosenwald Fund, 1931.)

Group Nursing.—Group nursing is an arrangement now adopted by a number of well-known hospitals, by which a special-duty nurse is assigned to the care of several patients, and her services replace the ministrations of the floor-duty personnel of the institutions. The rates for " group nursing " are considerably lower than for the exclusive services of a private duty nurse. Usually a nurse on " group duty " works during an eight-hour period, rather than on a twelve-hour basis. To the patient, the cost of group nursing for a twenty-four-hour period usually ranges from $5 to $8, as compared with $12 to $17.50 for private duty service, in addition to the day rates for hospital care. Graduate nurses on group duty for special nursing are usually employed by the hospital on a monthly basis, and the institution receives all fees paid by the patients for group-nursing services.

Group nursing is particularly adapted to acute medical and surgical cases, where the demands of each patient are beyond the limits of the floor-nursing staff, but are not so great as to require full-time service. The procedure was first formally introduced in the St. Mary's Hospital, Rochester, Minnesota, but has since been adopted by a substantial number of metropolitan hospitals. Group nursing has been spoken of as particularly suited to the resources of patients of moderate means, and has probably made possible the services of special nurses to persons who would otherwise have been unable to employ them. In so far as group nursing is substituted for private duty nursing, it has the twofold effect of lowering costs to patients and lowering the total incomes of trained nurses as a group. But in so far as group nursing provides additional medical services it not only improves the quality of medical care, but increases the total income of the nursing profession.

Nursing Service on a " Visit " or " Hourly " Basis.—A number of insurance companies and industrial enterprises have employed trained nurses on annual salaries to visit policy-holders or employees in their homes during periods of illness. The duties of these nurses are to report on the patients' medical condition, to render such professional services as are immediately required or prescribed by physicians, and to assist in the establishment of order and proper sanitary conditions in the household. A " visit " may vary from fifteen minutes to two hours in length, depending upon the circumstances. Visiting nursing as provided by insurance companies or industrial enterprises is usually supplied free of cost to the patient or his family.

Community organizations have at times been organized to provide nursing care to indigent persons or to those of limited means. The services rendered may vary greatly, and the fees to patients may be adjusted according to ability to pay, with a maximum rate, for example, of $1 or $2 per hour or per visit considered as full pay. The visiting nurse service may be conducted on a non-profit basis, with public subsidy through voluntary contributions or taxation. Municipal public health departments offer " bedside " nursing service in many urban areas. It is estimated that 16,000 public health nurses were on active duty in the United States in 1931.

Some private registries, as well as non-profit nursing agencies, have offered the services of nurses on an " hourly " or " visit " basis. Visiting nurse associations are established in all the larger cities and in many of the smaller ones. They have not, for the most part, been self-supporting from patients' fees, since the services have been provided mainly to the lower-paid wage-earner and the very poor. Efforts are being made, with some success, to provide services to people of all economic levels. Hourly nursing for people above the lowest economic levels is, however, still in the experimental stage.

Each of the experiments previously described depends for its financial support upon the patient's individual payment for his own medical care, except in so far as the costs are met by private philanthropy or governmental taxation. Two other types of organization for nursing care may be mentioned at this point, although they will be described in full in the succeeding chapter dealing with " group payment " for medical care. The first is the " Frontier Nursing Service "—a central organization for providing " nurse-midwives " in areas not financially able to support physicians.* The second is the mutual association by which members make equal and fixed, periodic payments for the provision of nursing care to individual members of the group.

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* See Miscellaneous Contributions No. 10, in the list of Committee publications at the end of this volume.

ORGANIZED COMMUNITY PROVISIONS FOR MEDICAL CARE

The non-profit organization of personnel and facilities for the provision of medical care has gone even further than appears from the foregoing discussion. Under industrial and other auspices, extensive and sometimes all-inclusive services have been organized and developed. Indeed in some places these embrace all medical facilities in the community. Of necessity, they have involved special plans for payment. Whether these developments are treated here as illustrations of organized provisions for medical.care, or in the following section of this report as examples of organized methods of payment, is equally arbitrary. For reasons of convenience, the discussion is postponed to Chapters XXX and XXXI, *q. v.*

Before leaving this subject it is of interest to consider in slightly greater detail the organization and administration of an organized community medical service.* In modern discussions of the facilities requisite for the effective provision of medical care the desiderata are: (1) competent personnel, adequate in numbers and in kinds to serve the functions of general practitioners, specialists, and technical assistants; (2) equipment and facilities for the effective practice of the personnel, whether for the patient served in the home, in the office or clinic, or in the hospital—all supplemented by the special facilities of the laboratory, X-ray, pharmacy, etc.; (3) effective, intimate correlation of the personnel and adequate availability of the equipment for all the professional practitioners.

How shall these objectives be attained? Consider a schematic representation of an organized community medical center (Fig. 47). The hospital is the hub of the wheel. Radiating from it are the special services (eye, ear, nose, and throat; dental; obstetrics and gynecology; urology; X-ray and physiotherapy; and laboratory), all intimately correlated with the hospital and serving its in-patient needs, while they also reach out beyond the field of in-patient care into the area of out-patient service. Out beyond the in-patient circle, but tangential to it, are the out-patient clinics and the sanitary service.*

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* For this purpose we take as our model the organization which operates at Fort Benning, Georgia. For details, see Publication No. 21, listed at the end of this volume.

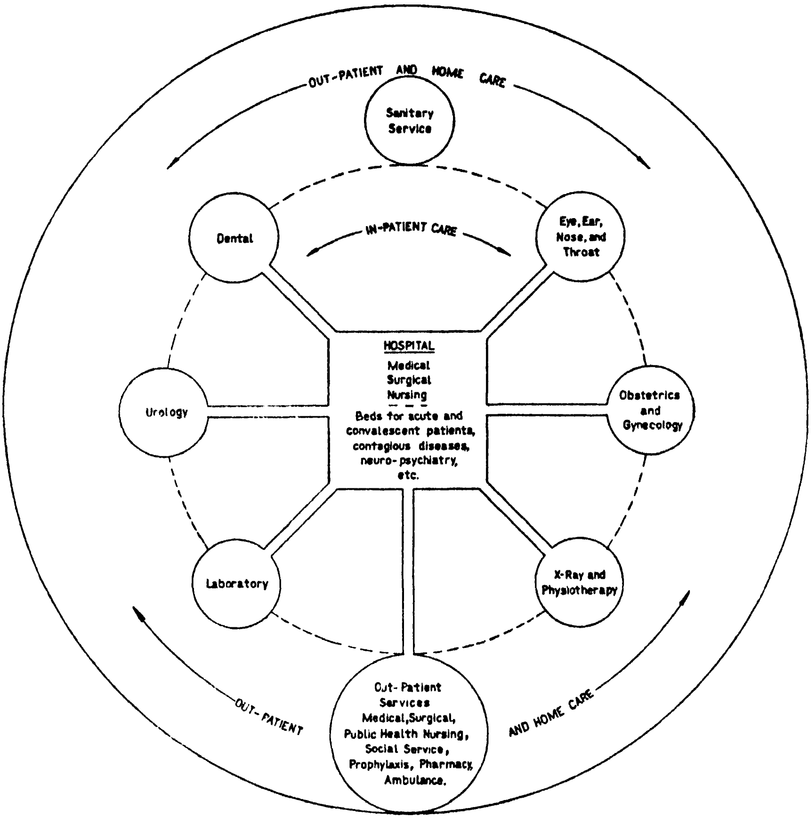
OUT-PATIENT AND HOME CARE
Sanitary Service
IN-PATIENT CARE
Dental
Eye, Ear, Nose, and Throat
HOSPITAL
Medical
Surgical
Nursing
Beds for acute and convalescent patients, contagious diseases, neuro-psychiatry, etc.
Urology
Obstetrics and Gynecology
Laboratory
X-Ray and Physiotherapy
Out-Patient Services Medical, Surgical, Public Health Nursing, Social Service, Prophylaxis, Pharmacy, Ambulance.
OUT-PATIENT
AND HOME CARE

FIG. 47. A SCHEMATIC REPRESENTATION OF AN ORGANIZED MEDICAL CENTER

The organization of the medical service at Fort Benning, Georgia.

To picture the operation of the organization, the services should now be considered in the reverse sequence. For the general sanitation of the environment, the prevention of disease, and the care of the well, the sanitary division—by its supervision of water and foods, wastes and refuse, housing and grounds, personal hygiene, and health education—cares for all the population all the year round. The out-patient clinics provide immunizations, physical examinations, and social service for the well, while for the sick they provide the physician and the nurse in the home and in the office. These clinics have at their disposal, in convenient and accessible form, the special facilities of the laboratory and the X-ray department and the consultant advice of the specialists. If an out-patient needs these special services, he receives them. If he needs extended care from a specialist, the out-patient clinic is the " receiving office " which assigns him to the appropriate special clinic. If he needs bed care he is admitted to an in-patient section of the hospital and is turned over to an internist, a surgeon, or other specialist who can provide such care as is necessary, drawing upon the entire resources of the organization. The patient of an organized medical center need not suffer confusion or hesitation in establishing contact with a doctor, a dentist, or an internist, surgeon, or other specialist. He need waste no time going from the general practitioner to the specialist, to the laboratory, and back to the specialist again. The path from the home to the office, the hospital, or the special clinic or laboratory should be clear and well known to all potential patients. If the patient needs an X-ray, a blood chemistry test, a urinalysis, or an examination by a surgeon or a laryngologist or a dentist, he merely walks down a corridor or across the hall from the office of the general practitioner first consulted. Does the physician wish to consult with a colleague? It is simply arranged.

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* If an organized medical center were developed in a community which already has an operating health department, obviously it is not necessary to have such a department in the medical center; it is sufficient to coordinate the work of the health department with the activities of the several divisions of the center.

The essential elements in such a scheme are obviously:

1. Intimate administrative and physical relations between (*a*) the offices providing general medical service for the ambulatory sick and for those in bed at home, and (*b*) the special clinics, the laboratories, and the hospital.
2. The primary use of the general (out-patient) medical service (staffed by general practitioners and internists) for all who need medical care, and the referring of patients to the special clinics, the laboratory, or the hospital by this general service.

From 80 to 90 per cent of the needs for medical care can be effectively served by the general medical service. And if this service is the " admitting office " to divisions staffed by specialists there need be no excessive use of specialists, no "shopping around" by the patient to find the practitioner best suited to a specific need, and there can be prompt and effective use of the various types of personnel and facilities which together constitute the armamentarium of modern medicine. Organized medical service which is competently and efficiently administered can bring great blessings to the people served, can vastly improve the technical and economic conditions of practice for professional personnel, and can achieve important economies in the costs of providing medical care. In addition, organized service lends itself far better than non-integrated, individual practice to group purchase and group payment.*

LOCAL COORDINATING HEALTH AGENCIES

Medical practitioners, clinics, public health agencies, and hospitals often perform their respective functions without regard to each other and in some respects with a duplication of activities in spite of the fact that coordination of a community's health services may yield several desirable results: the stabilization of revenue, the avoidance of duplicate services, the development of internal efficiency for particular agencies. The advantages of integrating health services have been recognized in certain communities, and during the past two decades local coordinating health agencies have been established in some large and medium-sized cities and in some counties.

As a preliminary step in coordination, municipal and county health departments were established, which, although they represented officially only the activities of a political unit, nevertheless influenced local voluntary health agencies. Since government health agencies include only a portion of the medical personnel and facilities of a community, it was clear that steps ultimately should be taken to coordinate the entire health activities in any particular area. Accordingly, the second step in the coordination of health services as part of a general movement was to coordinate community social service.

The fund-raising activities carried on by community chests and welfare federations were an outgrowth of the community activities in support of the United States Government during the recent World War. At present there are approximately 250 cities in the United States which raise more than 80 million dollars annually through voluntary contributions for the support of various types of social service. In practically all these cities some of the funds are used for the support of public health services and in 83 cities payments in large or small amounts are made to local hospitals. Although the activities of the community chests and welfare federations have been limited strictly to the raising of funds, the distribution of funds has required a careful study of existing facilities and coordination of the social and health agencies themselves through appropriate central committees or councils. These committees have taken the responsibility for advising community chests and welfare federations in the distribution of voluntary contributions. The work of these health and hospital councils has been varied and far-reaching in some communities.

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* For further details, consult Publications No. 4, 5, 8, 17, 18, 19, 20, and 21, listed at the end of this volume.

Two major types of coordinating agencies for health services may be distinguished: (*a*) health councils, which are limited exclusively to public health services, such as visiting nurse associations, anti-tuberculosis leagues, county or city health departments; (*b*) hospital councils, which are composed of representatives from the government and voluntary hospitals of the entire community.

Health Councils.—Health Councils are cooperative agencies for coordination in the field of public health.* They strive to procure efficiency and economy in the development and dispatch of public health work and to apportion public health activities to those fields and sections of the community in accordance with existing needs. Some health councils are supported by voluntary contributions as in Boston, or by member agencies as in Denver. Most of them, however, are supported wholly or in part by community chests or community funds. Health councils have been formed in eleven cities during the past fifteen years and others are in the process of formation. The following cities maintain health councils, federations, or leagues, founded in the years indicated: Cincinnati, 1917; Boston, 1919; Cleveland, 1920; Denver, 1925; Minneapolis and Hennepin County, 1930; Louisville, 1925; New Haven,

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* See Miscellaneous Contributions No. 12, in the list of Committee publications at the end of this volume.

1927; San Francisco, 1923; Allegheny County, Pa., 1930; Philadelphia, 1930; St. Louis, 1930. Health divisions in "councils of social agencies," "welfare federations," or "community chests" in many other cities render services somewhat similar to those of health councils.

The composition of the Cleveland Health Council is illustrative of the membership of those in other cities. The Cleveland Health Council is made up of: (*a*) executives and members of the boards of fourteen health agencies, supported by the community fund; (*b*) the chief local health officers of the federal, county, and city governments, and of the board of education; (*c*) representatives from the county medical, dental, and pharmaceutical societies and from private non-profit health agencies not supported by the community fund; (*d*) certain members at large to represent the public and medical professions. Of the total of fifty-four members in 1930, twelve were physicians. Problems with which the Health Council concerned itself during the year 1930-1931 included the following: the establishment of summer camps; the improvement of building inspection; the promotion of a hospital bond issue; publication of bulletins on certain aspects of public health, including immunization; the promotion of projects considered advisable by the city commissioner of health.

All activities of health councils may be summed up under the two major categories: (*a*) cooperation to stabilize and assure the income and support of the various health agencies; (*b*) consolidation of agencies to avoid duplication, either in function or in geographical areas. For example, in one city two visiting nurse associations were amalgamated and two others eliminated, and a city association for health and parent education was formed by merging the activities of three separate voluntary public health groups. A health council may occasionally concern itself with the promotion of internal efficiency in the management of specific health agencies through requirements with regard to uniform costs and reports. Usually, however, such activities are made a part of a general policy of the control of all social agencies. It is very seldom that a health council itself undertakes the provision of a specific medical service.

Hospital Councils.—The advantages of coordination in public health activities are equally great in the hospital field. The activities of hospital councils, however, have usually centered on problems of administrative efficiency, such as admissions, purchase of supplies, personnel administration, collections, financial records and reports. The Cleveland Hospital Council was formed approximately ten years ago for the purpose of establishing a central purchasing agency to obtain lower prices and uniformly high quality in hospital supplies. More recently the council has induced its members (more than fifteen institutions) to adopt a uniform classification of accounts and a common policy in the admission of part-pay and free patients. The Hospital Council maintains a full-time executive secretary and special full-time employees to regulate and coordinate purchasing, collections, admissions, and accounting.

Hospital councils have not ordinarily concerned themselves with problems of hospital income, although they have in some instances cooperated with hospitals in the classification and measurement of free service as a basis for the allocation of community needs or welfare federation resources. Usually community funds have been available only to assist in financing hospital operating expenses, but in Cleveland and Detroit hospital councils have exercised considerable influence on campaigns inaugurated by individual institutions for funds to construct new buildings, plant, and equipment, or to repay fixed indebtedness.

Full-time executive secretaries are employed in Cleveland, San Francisco, Newark, and several other cities, although in most instances the activities of hospital councils have been carried on by part-time employees, usually in connection with the local community chest or welfare federation. In Chicago, Washington, D. C., and Philadelphia the activities of local hospitals have been coordinated through city hospital associations. In New York City, the United Hospital Fund has served an important function in the coordination of hospital activities not only through its policy of obtaining and distributing philanthropic gifts to the hospitals but also through its authority "to further methods of economy in management and to coordinate and extend the work of the hospitals." The Hospital Information and Service Bureau of the United Hospital Fund has been in operation with a full-time secretary for several years, and during the past two years the New York Conference on Hospital Accounting has been organized under the auspices of the Fund.

More recently groups of hospitals through their councils or special organizations have introduced hospital insurance schemes by which they plan to stabilize their revenue from people of limited means, and to make hospital service available to new groups on a self-supporting basis. Such a plan was introduced more than a year ago by six hospitals in San Antonio, Texas, and was recently put into effect by five hospitals in Houston, and is under serious contemplation by groups of voluntary, non-profit hospitals in Newark, New Jersey, and in Chicago.

There is no logical reason why all health activities and institutions of a community should not be coordinated through agencies which represent public health institutions, hospitals, and private practitioners. Up to the present time, the financial policy of public health agencies and hospitals has made separate activities seem more practicable, due to the fact that public health agencies are supported almost exclusively from tax funds and voluntary contributions, whereas, except for government institutions, public subsidies form a relatively small portion of hospital income, which is largely derived from patients' fees. The primary problem of the health council, therefore, has been to raise funds, whereas the primary problem of the hospital council has been to achieve adequate utilization of personnel and facilities. The private practice of medicine has been carried on without public subsidy or control, although at present there is a move for cooperation between medical practitioners and public agencies in the care of indigent persons.

A local coordinating health agency representing all types of medical practitioners and institutions could be of great value to a community in: (*a*) the coordination of existing personnel and facilities to increase utilization and avoid duplication, (*b*) the establishment of professional and administrative standards; (*c*) the improvement in methods of financing medical service by the use of taxes and voluntary contributions for current expenses and the appraisal and promotion of group-payment plans by groups of potential beneficiaries; (*d*) the education of the public through the dissemination of knowledge concerning personal hygiene and intelligent use of existing facilities. The interests of the general public and of medical practitioners and institutions are identical. A local coordinating health agency would demonstrate this identity of interest and would expect cooperation rather than competition in the provision of medical service.

PART VIII

RECENT DEVELOPMENTS IN METHODS OF PAYING FOR MEDICAL CARE

CHAPTER XXVII

INDIVIDUAL PAYMENT FOR MEDICAL CARE

The economic problems of medical care involve not merely the production of medical services but also methods of financing them. The foregoing illustrations have dealt exclusively with departures from the individualistic method of providing medical services. They have not done more than touch upon the problems of the consumer who must pay the costs. The costs of sickness fall very unevenly and unexpectedly upon individuals and families in the United States, even within groups which are homogeneous in regard to age, sex, occupation, and economic status.

Traditionally the method of financing medical care has been the individual payment for specific services, according to the amount and type of medical care received. In many cases the individual finds payment impossible within a reasonably short period following the illness.

Five attempts to make more equitable the financing of medical care may be mentioned; the sliding scale, installment payments by individuals, voluntary contributions, insurance, and taxation.

THE SLIDING SCALE AND VOLUNTARY CONTRIBUTIONS

The practice of adjustment of fees by the medical practitioner according to the patient's ability to pay is strictly in line with the social theory that the well-to-do should aid the less fortunate in obtaining the necessities of life. The principle of determining charges according to ability to pay rather than benefits received has been long established in the field of government taxation, and is particularly applicable to the financing of medical care, for which the need arises irrespective of the economic status of the patient. The physician, as a humanitarian, is expected and prefers to minister to the sick according to their needs. In turn he adjusts his scale of fees to individuals so that he may earn a living from the sum total of his medical services. Some patients pay nothing, some pay moderate or more or less standard fees, others are charged higher fees according to their respective abilities to pay.

Certain practical difficulties have in the past interfered with the maximum benefits resulting from the application of the sliding scale of medical fees. In the first place, it is very often difficult for a busy practitioner to establish the procedures by which to determine with reasonable accuracy a patient's ability to pay. Not only may the patient have special reasons for overstating or understating his financial situation, but such factors as income, size of family, special obligations, duration of illness, are difficult to determine and evaluate. In the second place, patients are not evenly proportioned among practitioners according to economic groups. Whereas some physicians and dentists attend people of all economic levels, others have large proportions of well-to-do patients able to pay relatively high fees, others who may be equally competent from a professional point of view serve non-paying patients but do not have wealthy patients who may be charged on behalf of the poor. In the third place, the sliding scale compels only the "sick" well-to-do to contribute to the costs of sickness for non-paying patients. If the responsibility for the non-paying fraction of the population rests upon a portion of the community (not connected by family or employment responsibilities with the patient), it might properly be argued that the portion best able to pay these expenses are the "well" citizens rather than the sick. To tax the sick members of the community through the sliding scale, and to allow the others to avoid the responsibility violates the principle of ability to pay which the custom is expected to apply.*

The tradition of making and accepting voluntary contributions to the costs of medical care rendered to other people is of long standing. If voluntary contributions were timely and adequate in amount, and were distributed equitably among medical practitioners and institutions to defray their respective costs in rendering medical care to non-paying patients, they would contribute toward a solution of the problem of the uneven financial burden of sickness. But experience has indicated that voluntary contributions cannot be relied upon—either as to time, amount, or distribution—to pay medical bills for those unable to meet their own costs. During times of prosperity, there is no assurance that voluntary contributions of capital or current funds will be apportioned to the needs of the community rather than the whims of the donors, although current contributions for the maintenance of hospitals and clinics have in some instances been apportioned according to a coordinated community plan of social service. But these contributions are a small portion of the total amount of money applied to medical service (less than 50 million dollars annually), and most of them have been devoted to the expansion of plant and equipment, at times without regard to community needs.

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* See also p. 215, and for a more extended discussion of the sliding scale and its operation; Publication No. 24, listed at the end of this volume; and *Paying Your Sickness Bills*, by Michael M. Davis (University of Chicago Press, 1931).

But even though voluntary contributions might suffice during periods of prosperity, they cannot be relied upon during "hard times." For in periods of economic depression, the ability of voluntary contributors to maintain or increase their regular or special gifts is in inverse ratio to the need for funds to finance medical care for non-paying patients. At the present time, for example (December, 1932), when hospitals are receiving fewer and smaller voluntary contributions from the general public than ever before, they are faced with an unprecedented number of applicants for admission as free patients.

INSTALLMENT PAYMENTS BY INDIVIDUAL PATIENTS

The national custom of purchasing relatively expensive and permanent forms of personal property on the installment basis (such as radios, household furniture, and automobiles) has extended also to the payment of medical bills, particularly for the more expensive illnesses which require surgery and hospitalization. To be sure, the long-suffering and sympathetic physician has for many years received his fees on the installment basis, but it is only within the past decade that serious attention has been given to systematizing the payment of sickness bills by arranging a series of fixed, periodic payments by the individual.

A large number of proprietary organizations have been established which purport to relieve the patient and the physician of certain financial responsibilities through the use of installment payments of medical bills. Usually the installment arrangements are combined with a program of credit investigation and collections. In some instances the physician merely sells his account or accounts to the installment organization, which in turn attempts to collect the amounts due from patients on a weekly or monthly payment schedule. In other cases, the corporation serves as a bank, and lends money for the payment of a medical bill. The patient may pay the money direct to the medical practitioner or institution, or the installment organization may advance the money to the physician or hospital, relying upon the recipient to guarantee the payment in case the patient fails to do so.

Many millions of dollars are borrowed and repaid annually through personal loan and savings banks, and through the specially organized corporations for the collection of medical bills. According to a study by Leon Henderson,* an average of 28 persons in every 100 who borrow from small loan companies do so because of expenditures arising from illness or death. Mr. Henderson found that the average interest rates on these loans ranged from 12 to 42 per cent annually. Among eight printed reports including data on the purpose of 161,000 different loans, four indicated that medical purposes were the most frequent cause of borrowing, three listed medical expenses as the second most important cause, and one ranked medical care third among the assigned reasons for requesting small loans.

In so far as the privilege of payment by installment facilitates remuneration in full or makes available medical care which otherwise would not be procurable, it is of genuine economic value. Where, however, the amount of the installment obligation is beyond the possibility of payment by the patient, or when it is for services which might more properly have been rendered without expectation of repayment, the installment method fails to make more equitable the burden of medical costs. The installment plan is merely a device to enable a person to make payments gradually; it is not a method by which money—which would otherwise not have been available—can be obtained. Moreover, even to persons able to pay, the average interest rates have usually resulted in an increase in the total financial obligation of sick individuals. The burden of individual payment may be spread over time through installments, but the burden is not distributed in such a manner that members of the general public cooperate to lighten the individual burden, or to remove it when it would otherwise bankrupt the patient. The problem of payment is more than one of time; it is also one of the relationship of total amount to individual incomes and obligations. When the total amount of indebtedness is very large, no installment procedure will remove the difficulty. And the procedure offers a temptation to establish a relatively high fee for installment payment cases, on the ground that the patient in his effort to pay the total sum may perhaps pay a substantial proportion of the bill. This tendency to establish high fees accounts in part for the fact that installment payment organizations have never been conducted (although such plans have been suggested) on a non-profit basis. For a non-profit organization to succeed, it would be necessary for the sponsoring group to limit fees, that is to determine the maximum amounts for which the various individual patients would be permitted to assume financial obligations. This policy has not been encouraged or suggested by promoters of installment schemes.

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* See Miscellaneous Contributions No. 5, in the list of Committee publications at the end of this volume.

It would, of course, be absurd for a non-profit organization to pledge itself to collect, for practitioners or institutions, fees which are larger than patients can reasonably be expected to pay. Some of the proprietary medical finance corporations have definitely limited the amount which they allow individual prospective patients to borrow for medical bills. The motive in these cases, however, is to protect the company from risk rather than to relieve patients from the assumption of an unusual or impossible burden.

Installment payments for expenditures which can be budgeted by the individual or family are a desirable procedure in modern life. But for an individual, the budgeting of the costs of medical care differs from the budgeting of expenditures for rent, food, clothes, or furniture. The probable expenditures for ordinary commodities, or the obligations assumed for them, are limited by the person's actual or supposed ability to pay. Moreover such expenditures or obligations are voluntary, in the sense that life does not usually depend upon them. The merchant of ordinary commodities is under no obligation to deliver his product and may require its forfeiture when payment is not made. But a different situation exists with regard to medical care. The incidence of illness is rarely predictable by the individual, and it is impossible to enter the probable costs in an annual budget with any degree of accuracy or feasibility. Installment payments by individuals for their own medical care fail to touch the problem of distributing the costs among individuals according to a principle of equal amounts or according to ability to pay.

The incidence and costs of illness, however, in a group of individuals can be predicted with reasonable accuracy, and can be budgeted by the entire group if their payments are pooled. *Group* installment payments, therefore, achieve the objectives of standardizing the costs of medical care to the individual members of a group and of making these costs budgetable.

CHAPTER XXVIII

GROUP PAYMENT FOR MEDICAL CARE (SICKNESS INSURANCE)

Sickness is a hazard. Its costs are usually unpredictable to the individual, but like other hazards of life, the total amount of sickness and its costs can be predicted, if applied to a number of people over a specified period of time. By recognizing the principle of probability in estimating the costs of medical care for a group, the individual members can be assured that their total contributions to a common fund will suffice to provide necessary care to all sick members. In this way the uncertainty of the costs of illness are changed to certainty, for each member is expected to contribute regularly according to an agreed schedule; the costs of medical care " fall due " with the same regularity as the rent, and the amount payable is unaffected by the individual need for medical care, except in so far as payments may be remitted during a period of illness.

VARIETIES OF GROUP-PAYMENT ARRANGEMENTS

Methods of group payment which permit individuals to contribute equally acording to a fixed schedule are, in fact, applications of the principle of " insurance " to the costs of medical care, similar to insurance against hazards of fire, theft, accident, or death. The average charge for the group replaces the actual charge for the individual. Plans for group purchase by fixed, periodic payment may vary in many respects. They may be legally compulsory or they may be voluntary. They may apply to groups whose homogeneity arises from any characteristic, such as place of employment, religion, nationality, place of residence, membership in a union or fraternal order, or attendance at an educational institution. The sponsorship of the group-payment plan may be proprietary, or the plan may be conducted in such manner that the gains or losses accrue to the entire group rather than to a limited number of individuals. The methods of payment may involve weekly, monthly, quarterly, or annual contributions, and they may be made directly by individual members or through a common treasury, such as that of the employer-employees' association, benefit association, or hospital association. The practitioners or institutions may be remunerated according to a fee schedule for services actually rendered, at a fixed rate per person eligible, or in monthly or annual total amounts. The scope of service may include physicians' services, dentistry, nursing care, hospitalization, or any combination of these medical benefits, wholly or partially covered from a financial point of view. Inasmuch as the various group plans differ widely in their administrative features, it would be of slight value merely to describe in sequence specific arrangements now in existence. They are all similar in the objective and technique of group purchase through fixed, periodic payment, and many have other features in common. They differ, however, in details. For this reason the administrative features of group payment will be discussed generally, with illustrations of variations drawn from specific plans, the complete details of which can be determined through reference to publications of the Committee on the Costs of Medical Care or other cited sources of data.

Group purchase through fixed, periodic payment should be contrasted sharply with the principle involved in governmental taxation. In taxation, payments are required only from certain members of the community according to their ability to pay. Curiously enough, in the field of medical care, the benefits of tax funds have usually not been available to those who supply the money. Most government hospitals, for example, are closed to other than indigent persons, although this policy has been quite generally discontinued in the treatment of persons with mental disease or tuberculosis.

Group payment (insurance) for the costs of medical care requires equal payments from designated actual or potential beneficiaries, and the medical benefits are limited to participating members or dependents of the contributing group. Taxation, except on a capitation basis, ordinarily demands unequal payments from members of the population, and may withhold medical benefits from the very persons who provide the funds. Sickness insurance is a device by which groups of persons contribute equally (that is, without regard to special abilities or needs of individuals) to the payment of their own medical bills. In the United States taxation has usually been invoked in procedures through which one group (selected because of actual or presumed ability to pay) meets the costs of medical care to an entire group in which the taxpayers are included, or to a separate group from which they are excluded.

The financial burdens of sickness are of two types: the loss of income during a period of employment, and the costs of medical services necessary to recovery from illness. Sickness insurance, as the term is used in the following paragraphs, refers to fixed, periodic payments for the group purchase of medical care, although payments to cover the costs of medical care are sometimes joined with contributions to cover the loss of income during the period of illness.

In the United States at the present time there is no legally compulsory sickness insurance, except for industrial accidents or, in other cases, certain occupational diseases, for which payment must be made by the employer. Such illnesses are paid for according to the statutes of the various states and federal legislation covering civil employees of the United States and the District of Columbia, longshoremen and harbor workers, and private workers in the District of Columbia. The laws vary by reason of differences in state constitutions, in industrial development, and in the effectiveness of labor and employee associations, but there is a fundamental similarity in them all.

MEDICAL CARE THROUGH WORKMEN'S COMPENSATION LEGISLATION *

The first state laws of approved validity and general application for the compensation of injured workmen were enacted by New York and Wisconsin in 1911 after several years of study. Within five years twenty-nine more states made similar enactments, bringing the total to thirty-one states in 1916. At present Florida, Mississippi, Arkansas, and South Carolina are the only states in which compulsory workmen's compensation insurance is not in effect. In most states (all but six) the compensation acts are administered by special boards, commissions, or individual commissioners, rather than by the

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* The discussion and factual matter with regard to workmen's compensation insurance is based upon a special memorandum prepared by Lindley D. Clark, A.M., LL.M., formerly legal expert for the United States Bureau of Labor Statistics. A full discussion of the professional and administrative problems of Workmen's Compensation Insurance is presented in *The Way of Health Insurance*, by A. M. Simons and Nathan Sinai (University of Chicago Press, 1932), p. 180-194. See also Abstract C2, listed at the end of this volume.

courts. Some laws cover only " hazardous " or " extra hazardous " industries, and nearly all exclude domestic employees, farm laborers, casual employees, and firms employing less than a specified number of persons.

To be compensable, injuries must, as a rule, arise from and in the course of employment, though in some laws it is only required that the injury be received in the course of the employment or be sustained in the performance of duty. In a large majority of the acts the idea of " accident " is expressed, or of violence to the human physical structure; in others the language permits the inclusion of any physical disability occasioned by the nature and conditions of the employment, thus bringing so-called occupational diseases within the scope of the law. Such diseases are being increasingly recognized as properly compensable, either by language or general import, or by the inclusion of lists of diseases to be so regarded. Infections and diseases resulting from accidental injury are compensable under all laws.

A waiting-time or period of disability uncompensated in cash is provided in all but two states, ranging from three days to two weeks, one week being the most common period. Medical treatment, however, must be provided, if needed, whether cash compensation becomes payable or not.

The use of a private insurance company or a state insurance fund is required by law in all states but one, in order to guarantee payments to the employed beneficiaries. State funds exist in seventeen states. Self-insurance under prescribed conditions is commonly allowed, the employer setting aside certain amounts annually for the payment of cash compensation or the costs of medical care.

Every compensation act contains provisions for " reasonable," or " necessary " medical treatment. In eight states and under the federal acts there is no limit with respect to either time or cost of such treatment, while other laws limit one or both. The period of treatment required is as low as two weeks in three states (subject to extension in one of these by order of the commission), and is fixed at four weeks or thirty days in eight (subject to extension in five). Maximum expenditures of $100 per case are stipulated in eleven states, subject to increase in eight.

Dental work is quite generally regarded as a proper part of the treatment of the results of injury and a few laws contain specific provisions with reference thereto. The supplying of artificial members is variously dealt with under different laws and under the policies adopted in the states where the law is not specific. There is a general tendency toward providing such appliances even though not specifically required by law.

The employer is required to provide the attending physician in most states; but in four or five the employee may choose his own doctor at the employer's expense. Provisions for emergency attendance and for a change of physicians in cases of unsatisfactory conditions are generally found, while in a few cases the employee may choose his own physician only where a major operation is involved. In one state the employer is required to maintain a " panel " from which the employee may make his selection. Refusal to accept treatment or to obey instructions, or persistence in injurious or insanitary practices generally suspends and may forfeit payments of cash benefits. It is commonly provided that employers shall not be responsible for malpractice on the part of physicians, but only for any resultant disability.

The fees paid to medical or dental practitioners are presumably established at levels appropriate to employed persons of a like standard of living in the same community, and are, as a rule, subject to regulation or approval by the state board or commission. Several states have established fee schedules by action of the boards. According to a number of laws, hospitals and groups of physicians may contract to provide service on an annual basis, their equipment and personnel being subject to inspection by state authorities. The provisions with regard to minimum and maximum fees do not affect annual agreements arranged between employers and physicians or hospitals.

As a rule, only practitioners recognized by state laws can collect fees under the compensation acts, and osteopaths, herb doctors, masseurs, and mechanotherapists have been held outside the requirements by various boards and commissions. Christian Science practitioners may render service in one state, unless the employer files written notice with the State Board to the contrary.

Employees claiming or receiving cash compensation must submit to examinations ordered by the administrative agency or reasonably requested by the employer; and refusal will, as a rule, suspend cash or medical benefits during its continuance. The claimant may have his own physician present when he appears at the request of the employer: some laws contain this provision where the examination is ordered by the board.

The medical profession participates in industrial accident work in three ways: as medical advisers or directors of the state commissions, as employees of insurance adjusters or business enterprises which maintain first-aid stations, and as specialists in the treatment of industrial accident cases.

THE UNSUCCESSFUL CAMPAIGN FOR COMPULSORY SICKNESS INSURANCE IN THE UNITED STATES *

Various attempts have been made to introduce compulsory sickness insurance for non-industrial accidents in the United States. During the years 1912 to 1920, an active but unsuccessful campaign was carried forward to enact legislation to this end in several states. After two years of preparatory work, a Committee on Social Insurance, appointed by the American Association for Labor Legislation, issued for public circulation its " Standard Bill " for a health insurance law. Widespread interest in the subject was manifested by the appointment of several independent commissions to study compulsory insurance. One of these was created by the American Medical Association in 1916; another, appointed by the United States Public Health Service, consisted of a special group of public health physicians and favored some form of compulsory insurance to be controlled by the state health departments; and a third was appointed by the National Convention of State Insurance Commissioners. In 1916 and 1917 resolutions were brought up in the House of Representatives in Congress to create a Federal Commission to draft a plan for a national insurance fund against sickness, invalidity, and unemployment. These resolutions " died " in committee.

Nine states (New York, Massachusetts, New Jersey, Ohio, Pennsylvania, California, Illinois, Connecticut, and Wisconsin)

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* See *The Purchase of Medical Care Through Fixed Periodic Payments*, by Pierce Williams (National Bureau of Economic Research, 1932), Chapter II.

gave special study and legislative consideration to the question of sickness insurance. In the first five states mentioned, bills to provide compulsory systems were unsuccessfully introduced in the legislatures.

Opposition to all proposed compulsory sickness insurance plans came from employers, insurance companies, organized labor, and the medical profession. All these groups recognized the necessity for some organized measure for the relief of human suffering and economic loss from illness, but all believed that the solution did not lie in a state-operated insurance scheme. Employers argued that, if there were such a law, it should entail a tax on the general population in order that industry should not be forced to bear disproportionate expense. Since only the lower economic classes would be benefitted, they termed such a measure "class legislation." The attitude of organized labor was divided. Samuel Gompers, then president of the American Federation of Labor, viewed the movement as paternalistic, socialistic, and an unjustifiable interference with the rights of wage-earners who should, he believed, take care of their own workers through trade unions. Many of the state federations of labor, however, went on record in favor of compulsory health insurance. At present, no active movement for compulsory sickness insurance legislation is in progress in any state of the Union.

CHAPTER XXIX

VOLUNTARY SICKNESS INSURANCE UNDER PROPRIETARY AGENCIES

When the term " voluntary " is used to describe the nature of sickness insurance or group-payment plans, it refers to the absence of direct legal compulsion through formal statutes; in so-called voluntary insurance economic pressure may be exerted by members of a private organization, or by indirect legislation operating to the detriment of uninsured persons. As will be shown later, some of the schemes for group payment by employees are made compulsory by the employer, although not by the laws of the state. Likewise in many of the European countries where there is no legally compulsory health insurance, the net result of existing law is to compel individuals to join voluntary associations. For example, in Denmark, the uninsured employee is very effectively " blacklisted " by employers, the state laws make him a citizen of the " second class," and he may not marry without a special permit. The government also gives substantial subsidies to the various sickness insurance societies, in this way making only the participating members beneficiaries of public funds.

In so far as the United States is concerned, the examples cited in the following discussions of group-payment plans may all be subsumed under the general class of voluntary sickness insurance, for there is no legally compulsory participation. Most of the plans, it will be observed, are organized under non-profit auspices, rather than by lay promoters or by professional groups which receive any portion of the contributions other than that required for administration and for payments to medical practitioners and institutions. Inasmuch as the varieties and volume of sickness insurance plans under proprietary auspices are fewer and less important than those conducted on a non-profit basis, they will be mentioned first, so that attention can then be directed to the more extensive and prevalent non-profit arrangements.

For purposes of the present discussion, a proprietary scheme is defined as one in which a portion of the money contributed by the participating group in excess of the actual costs of administering the plan accrues to some intermediate person or group. This definition excludes those arrangements by which physicians or hospitals receive the entire amount paid into the fund (less costs of administration).

MEDICAL BENEFITS UNDER COMMERCIAL ACCIDENT AND HEALTH INSURANCE POLICIES *

Accident and health insurance policies are offered by life insurance companies, casualty insurance companies, and fraternal and benefit associations. Although the accident and health policies were originally separate contracts, they are now ordinarily combined, and medical benefits are common to both. These contracts regularly provide certain guaranteed cash benefits to pay the costs of medical care. None of the companies agrees to provide medical services "in kind." The amount of cash benefit depends upon the type of medical care received, with designated maximum amounts established regardless of the total expenses incurred by the patient.

Not all classes of the population are solicited for commercial accident and health insurance: persons under 18 years of age or over 55 or 60, those whose occupations are more than ordinarily hazardous, and, frequently, women are excluded from this type of insurance. Rates for those eligible vary with the age and occupation of the insured and depend upon whether or not the policy is cancellable. The provisions of the cancellable policy are broad; indemnity is included for death from accidents, for disability (either partial or total) from accident or sickness, and for medical expenses. Policies are usually sold for a one-year term, and the right to cancel or renew the contract rests with the insurance company.

Benefits for disability may be for either total or partial disability and there is great variation among policies with respect to the amount of weekly indemnity and the length of time for which it will be paid. Medical benefits in accident and health insurance are limited to provision of money for hospital and nurses' fees, costs of surgery, and medical treatment.

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* *Cf.* Chapter XI, *The Purchase of Medical Care Through Fixed Periodic Payments*, by Pierce Williams (National Bureau of Economic Research, Inc., New York, 1932) and Abstract C2, listed at the end of this volume.

Commercial insurance against disability from accident and sickness may be purchased on a monthly or weekly premium basis by industrial wage-earners. Although these policies are lower in costs than the general accident and health insurance sold to the upper income groups, they are correspondingly more limited in scope and benefits because of occupational hazards and the high costs of collecting premiums. The larger insurance companies and a number of smaller casualty companies write industrial disability insurance, but the two classes of carriers offer dissimilar coverage.

The benefit paid by the larger companies for total disability (blindness, loss of both feet, or both hands) is a cash indemnity with a paid-up insurance for the full face value of the policy. Nursing service is also furnished to industrial insurance policyholders by these companies. Smaller casualty companies offer what is primarily an accident and health policy with a small life insurance policy as a supplementary feature. The benefit for total disability includes a weekly indemnity and the payment of the principal sum. Most of the companies selling this type of insurance are in the South, and a very large proportion of the policyholders are negroes.

The ordinary life insurance policies which have clauses covering permanent and total disability probably protect more persons than are covered by accident and health insurance policies. Two hundred and fifty companies, at the time of the survey, offered this form of protection, and in 1930 the amount of benefit paid for total and permanent disability claims was $52,000,000.

Since 1911, a type of insurance known as " group coverage " has been offered individuals in large industrial groups who are insured at a low rate under a blanket policy giving protection against non-occupational accidents and sickness. As in other forms of commercial accident and health policies, restrictions are in force with regard to the type of injuries and illnesses covered. Usually persons who buy group health insurance also hold group life insurance policies and hence are eligible to the free nursing service rendered this class of clients by the large life insurance companies. This nursing service is the most significant medical benefit rendered " in kind " by commercial carriers.

The newest form of group coverage is that sponsored by trade unions. The premiums are paid wholly or in part by an employees' association, and benefits are extended to include indemnity for disability and old age. Several such arrangements have been instituted since 1926.

Another source of accident and health insurance coverage is found among fraternal orders. In 1931, a total of 123 fraternal societies were listed with assets of $753,300,000. In 1930, these societies paid $12,000,000 in claims for accident, sickness, or permanent disability. The coverage and benefits of these orders are restricted, and except for a few societies which maintain hospitals or tuberculosis sanatoria, or give free nursing service to members and their families, no direct medical care is furnished. Some local lodges of fraternal orders have services which in many instances amount to organized charity. It is impossible to estimate the total amount of coverage from this type of insurance.

PRIVATE MEDICAL INSURANCE ASSOCIATIONS (INDIVIDUAL POLICIES)

Numerous private projects have been planned and attempted by which insurance for medical care could be made a reality to people of moderate means. The projects have usually taken the following form, although they may vary in certain details:

A lay promoter organizes a corporation authorized to contract and accept premiums for medical care to individuals. The corporation relies for its working capital either upon the preliminary premiums or funds from the sale of capital stock or commercial loans. The promoter of the plan, personally or through agents, sells policies or contracts, guaranteeing to each holder certain types of medical care, in consideration of regular monthly or quarterly payments, ranging from $1 to $2.50 per month according to the medical services included in the agreement. Professional services to policyholders are usually obtained from individual physicians, who are paid a flat amount per policyholder, according to a fee schedule, or on an annual basis.

The medical insurance associations vary greatly in their administrative procedures. Some sell individual policies and purchase medical care for policyholders from private practitioners according to a specified fee schedule. Others sell individual insurance policies, but contract with practitioners or hospitals on the basis of agreed totals per year or per month. The most successful associations offer "group"—as opposed to individual—policies, and contract for medical care at agreed costs per year, or provide medical care themselves.

For any medical insurance plan to be successful it is necessary that the amount of receipts and expenditures should be predicted with reasonable accuracy. This requires an estimate of the amount of expected illness, a variable which cannot be calculated unless the policyholders are procured without "adverse selection" in medical risk. When individual policies are sold, "poor risks" are most apt to purchase the insurance, since the young and healthy seldom are attracted by the benefits offered. The selective enrollment of policyholders on a basis of age, sex, or physical examination, as well as the time involved in soliciting individual prospects, involves costs which make it difficult to provide good medical care at rates which are attractive to the potential members of the insured group.

From the standpoint of the physician or dentist who is to render the needed service, it is likewise necessary that some certainty be given to the expenses on behalf of policyholders. This certainty cannot be provided through the promise to pay all necessary medical bills according to a standard fee schedule. The possibility that large amounts of medical care may be demanded represents a hazard of considerable magnitude, even if the contingency of collusion between practitioner and policyholder be left out of consideration. No medical insurance association organized on the basis of individual policyholders served by individual practitioners on a fee-for-service basis has been permanently successful in the United States. The revenue has been too small to meet the expenses, or the promoters have been forced to restrict the amount or quality of medical services to the point where old policies were not renewed as rapidly as new ones were written.

Where the medical insurance association arranges for service to individuals through annual retainers or a fixed fee per person enrolled, the plans have been somewhat more successful. But even here the time and effort spent in selling policies renders these medical insurance plans of doubtful financial advantage to the promoters who wish to provide good medical care. Several plans may be described briefly to show the proposed arrangements whereby a limited group of practitioners is made available to the policyholders for ordinary illnesses. The following quotation is from a letter in which the writer asked that his privately owned scheme be granted a loan from a philanthropic foundation during the early period of service.

> " About three months ago I incorporated a company which sells to the public at large a certificate, which gives to the purchaser the service of a physician at any time it is needed and as often as it is needed. This service is rendered not only to the subscriber but to every member in the immediate family, and the cost is just 25 cents per week.
>
> " In each section of the city that we operate we have a physician subject to call by our clients. Wherever the number of subscribers warrants it we will have more than one physician. So that the public is certain to get and have been getting the best service possible.
>
> " Our method of compensating our doctors is as follows: For every family assigned to the care of the doctor in his section, he receives 25 cents per month irrespective of whether his services were required or not. So that if we assign 400 families to a doctor he is assured of $100 a month income for which he will probably be required to make from 50 to 60 calls, judging from the past experience we have had. Our collection cost runs about 25 per cent which leaves 50 per cent out of every dollar collected for overhead and profit."

Three months after the date of this letter, the plan was still functioning, but the scheme had not grown in numbers of patients. It will be observed that only 25 per cent of the amount collected from patients is paid to attending practitioners, the remainder being required for solicitation, overhead costs, and profit. The physician is to receive $3 per year per family, but is expected to render only simple general care, such as comes within the field of a general practitioner.

A somewhat different arrangement for the payment for general practitioners' services is set forth in a plan which requires each participating physician to purchase 100 shares of stock at $1 per share. He receives an annual retainer of $15 per patient, and the " sales talk to the physician " states that " he will be allowed to care for 500 contract holders, which will provide a $7,500 annual practice." This plan was never actually placed in operation. The benefits to the patient excluded night calls and home calls (except in emergency). Extra fees were required from members for the treatment of venereal diseases or maternity cases, and also for the services of specialists, X-ray, hospital, for mileage on home calls, and for drugs and laboratory examinations.

In many instances the limitations of the service to which policyholders are eligible are so numerous that the benefits are of doubtful value to the patient. It is the unusual illness which requires insurance, and according to most private insurance contracts, it is the unusual illness for which extra fees are charged. Fees can be established to cover much broader medical benefits for the same premiums where group practice is instituted, where no intermediary is employed to promote the plan, and where groups of insured members (rather than individuals) are parties to the contract.

One of the questions raised in the minds of medical practitioners is the effect of an insurance scheme upon the freedom of action of individual physicians. In order that no organized opposition should arise from established medical societies, much of the sales' promotion material has been directed to physicians as well as the general public.

PROPRIETARY ORGANIZATIONS FOR GROUP MEDICAL INSURANCE

In Washington and Oregon there have been developed on an extensive basis proprietary associations for the provision of medical care to groups of employed persons. They are popularly known as " hospital associations." These associations (which in some instances also provide services for workmen's compensation cases) contract with employers to provide certain types of medical service for all employed persons in exchange for monthly payments ranging from $1 to $2.50 per employed person. It will be observed that the professional responsibility is to the employer, although the payment is made through a payroll deduction voted by a majority of the employees. According to a typical contract, the medical contractor or association agrees to " render and give necessary care, treatment, medicine, hospital board and room, and professional services for all non-accident injuries and sickness " except as specified. Certain dental services are usually included, but in general there are excluded all treatments required for venereal diseases, conditions peculiar to sex, and injuries resulting from unlawful acts.

In both states the contracts may be joined with arrangements for providing medical care for industrial accidents. The Medical Aid Act of 1917 in Washington allows the employer to contract at a flat sum for medical care for industrial injuries, rather than to have payments made to individual physicians from a state fund according to a fee schedule. In a few instances the industrial employers may make their contracts direct with medical practitioners or institutions. The larger number, however, deal through the private associations, which in turn pay the practitioners or hospitals according to a fee schedule or annual retaining fee or salary. Of nine associations in Washington which were visited by a representative of the National Bureau of Economic Research in 1930 and 1931, all except one were controlled by physicians. Five of this group owned or leased hospitals for their exclusive use, and all but one maintained some type of clinic or dispensary for the care of emergency cases, for the direction of patients for treatment, or for the routine care of groups in outlying areas. Where the association does not own a hospital, the patient is usually allowed a choice of several institutions, and these are remunerated according to the association's fee schedule.

As to the trend in contract practice in Washington, the following quotation from the larger report on this subject is of interest:

> "There seems to be no question that the contract system of medical care is extending in Washington industries. In outlying sections of the state it has been common for at least twenty-five years. More recently, following the opening in Seattle of a branch of one of the large commercial clinics, the system has begun to be used in that city. The local medical association in Seattle is known to be divided in its opinion of the practice. Officials of two of the large associations express the opinion that the service is a public health measure, bound to spread so long as wages remain too low to permit workmen to employ private physicians at regular fees. They consider regulations desirable, and prefer it to come from the medical profession. Leaders among the industrial surgeons hold that unless physicians themselves make provision for cheaper and better medical care, whether through group practice or otherwise, 'state medicine' will be established. Therefore, they believe it is good policy to set up and maintain a high standard of medical service under the contract plan as it is now developing." *

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* *Medical Care Through Fixed Periodic Payments*, by Pierce Williams (National Bureau of Economic Research, Inc., New York, 1932), p. 76-77.

In Oregon proprietary medical insurance corporations, as intermediary between employer and medical practitioners and institutions, closely resemble those which prevail in Washington. The employer may contract for either or both industrial and non-industrial accidents, and the arrangements may be direct with the " hospital association " or through the Oregon Industrial Accident Commission. Payroll deductions may range from $1.50 to $2.50 per employee, varying with the scope of medical care provided and the nature of the employment.

In California, the intermediary hospital association has been developed to a limited degree for the care of industrial employees for non-compensable injuries. Where industrial enterprises have arranged for medical care for employees, they have usually followed one or more of the following procedures; direct contracts with groups of practitioners or a medical institution (a type of organization to be described later, see p. 485) ; actual provision of the medical care through full-time company medical staffs and hospitals which also take care of industrial accidents. Payroll check-offs are commonly used to provide the funds for medical care for non-industrial injuries or conditions.

Mention should also be made of the activities of the Pacific Life Extension Institute in Los Angeles, operated by a layman and organized as a proprietary company. Individual and group contracts are accepted from employed persons. All medical service is provided by a local proprietary hospital and clinic, the officers of which were the chief promoters of the Pacific Life Extension Institute. The net result of the arrangement is to place the plan under proprietary auspices, although the benefits accrue primarily to the practitioners rather than to the lay manager whose income is limited to a fixed salary.

Illustrations of the types of organization developed on the Pacific Coast have been emphasized because they represent almost the sole instances in which proprietary associations have been successful (financially) in the provision of general medical care through group payment.

A number of proprietary associations have been formed in recent years to provide insurance for hospital care. These associations will be described in Chapter XXXI, as illustrations of " Hospital Insurance."

CHAPTER XXX

NON-PROFIT ORGANIZATION OF GROUP PAYMENT FOR MEDICAL CARE

The provision of medical care for profit as described in the previous chapter is to be contrasted with non-profit arrangements for group payment of medical care. By " group payment " is meant any arrangement by which a number of individuals jointly pay the costs of medical care provided to members of the group who require it. The contributions from members are equal, regardless of whether individuals receive a small or large volume of medical care or none whatever during a fiscal period.

Where the group-payment arrangements between patients and medical practitioners or institutions are established on such bases that no intermediary agency gains or loses directly from the negotiations, the plan will be considered non-profit for the purposes of the present discussion. This definition includes as a non-profit arrangement any group-purchase plan by which the medical practitioners or institutions deal directly with individual patients or with an agency composed of and legally controlled by the potential patients rather than by a middleman. *The essence of the non-profit arrangement is the fact that the patients' fees (except the necessary costs of administration) accrue to medical practitioners or institutions.*

There are many voluntary, non-profit, group-purchase arrangements in effect in the United States at the present time, and the communications to the offices of the Committee on the Costs of Medical Care indicate that many others are contemplated or already in the stage of being organized. It is impossible to classify them exclusively on the basis of any particular characteristic, such as the nature of the group of patients to be served, the basis of financing, the methods of remunerating practitioners or institutions, or the scope of the medical services offered. The Committee has made several detailed studies of specially organized, voluntary, group-payment plans under non-profit auspices, chosen as illustrations of the more successful types of these agencies. In the following pages, many descriptive details will be drawn from these studies as well as from reports by other organizations.*

TYPES OF GROUPS SERVED

Employees of Single Establishments.—Many different kinds of groups have utilized the principle of group payment in the provision of medical care. The most common group is that drawn from the employees of a single business enterprise. Group-payment plans have long been the custom in providing medical care for employees of lumber camps, coal and metal mines, and railroads. In the publication previously cited, Mr. Williams estimated that about 540,000 gainfully employed persons in mining and lumber industries were eligible to more or less complete medical care on a fixed-payment basis. This estimate applied to the year 1930 and to 21 states. In the same publication it was estimated that medical and surgical attention to sick and injured workers was provided by approximately one-third of the Class I steam railroads in the United States. Twenty-seven institutions provided specific information on which this estimate was based.

In the field of general business enterprise, particularly manufacturing, it is common for some type of health service to be organized in industrial establishments. Many of these services are provided solely for first-aid treatment and for the care of compensable industrial accidents. The National Industrial Conference Board determined in 1930 that many industrial health services were expanding to include the provision of medical care.

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* Among the most important separate monographs dealing with the problem of group payment are the following:

The Purchase of Medical Care Through Fixed Periodic Payment, by Pierce Williams (National Bureau of Economic Research, Inc., New York, 1932).

The Way of Sickness Insurance, A. M. Simons and Nathan Sinai (University of Chicago Press, 1932).

"Sickness Insurance in the United States," by C. Rufus Rorem, *Bulletin of the American Hospital Association*, July, 1932.

University Student Health Services, Publication No. 19 of the Committee on the Costs of Medical Care.

Other reports dealing with specific projects are:

Medical Care for 15,000 Workers and Their Families, Publication No. 5 of the Committee on the Costs of Medical Care.

Medical Service of the Homestake Mining Company, Publication No. 18 of the Committee on the Costs of Medical Care.

A Community Medical Service Organized Under Industrial Auspices in Roanoke Rapids, North Carolina, Publication No. 20 of the Committee on the Costs of Medical Care.

Organized Medical Service At Fort Benning, Georgia, Publication No. 21 of the Committee on the Costs of Medical Care.

Group Payment for Medical Care: The Stanocola Medical and Hospital Association, by C. Rufus Rorem and John H. Musser, M.D. (The Julius Rosenwald Fund, 1932).

There has been a growing tendency for industrial health services, designed for the provision of physical examinations prior to employment or for the prevention and treatment of industrial accidents and diseases, to expand into organizations designed to provide general medical care. The estimates of the National Safety Council indicate that of approximately 5,000,000 persons on the payrolls of 3,600 typical establishments in 1929, approximately one-third were under some form of health supervision. In a more recent survey, Elizabeth Dublin * found that at least 5,664 industrial plants with 4,200,000 employees provide physical examinations or more extensive medical service. More than one-half of these plants, with 3,100,000 employees, provide examinations which are prerequisite to employment and periodic examinations thereafter. Provision of medical service for sick employees was reported by companies with more than 2,000 plants and over 2,000,000 employees. The majority of these furnish care at company clinics. The services range from emergency to complete care.

Of special interest here is the finding that 398 plants report that they furnish general medical care and 375 that they provide general medical and surgical care to employees. These 773 plants have, on the average, 770 employees each; they provide medical care for 600,000 employees. These medical provisions obtain principally in coal and metal mining groups, among oil and railroad companies, among textile plants, and among those engaged in producing iron and steel and forest products. The medical departments are conducted by the employers in 65 per cent of these plants. In 16 per cent employees' mutual benefit associations are in charge of the medical provisions. In 19 per cent the services are provided through insurance companies or by combinations of agencies. The 773 plants employ 617 full-time and 518 part-time physicians. Finally it is especially significant to note that 515 plants with 430,000 employees provide medical care for the families of the

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* *Medical Care in Industrial Establishments*, by Elizabeth Dublin (National Tuberculosis Association, New York). (In preparation.)

workers. In this group, 53 per cent with 203,000 employees provide general medical care and 39 per cent with 211,000 employees provide complete medical and surgical care. It may therefore be estimated that at least 1,000,000 to 1,500,000 persons (industrial wage-earners and their dependents) receive more or less complete medical care from organizations operated under industrial auspices. The wide variety of these industrial medical services and the diverse plans under which they are administered and financed provide extensive and significant experiments in the provision of organized medical service for wage-earning populations.

A number of the larger oil companies, particularly those engaged in extracting petroleum and operating refineries, have found that the more or less isolated locations of their plants make group purchase of medical care the most effective way of providing medical service for their employees. In recent years, non-industrial groups have effected various contractual arrangements for the provision of more or less complete medical care to themselves and families, particularly among metropolitan department stores and banks. There are a number of other instances, however, where employees of publishing houses, warehouses, or wholesale firms have found a group-payment plan of advantage.

In some communities employees of several different companies have formally cooperated in the sponsorship of group-payment plans in order to improve the quality of medical services available or to lower the costs to participating members. An outstanding example of this arrangement (which in many respects simulates a " community " medical service rather than " industrial " medical service) is the arrangement at Roanoke Rapids, North Carolina,* where five industrial companies, the local graduate nurses, and the teachers in the municipal schools combine to purchase medical care through fixed, periodic payments. A more recent experiment has been the proposed plan in Salem, Oregon, where the Physicians' and Surgeons' Hospital Association has entered into a contract with a number of industries including a large paper mill, a large saw and planing mill, two linen mills, several woodworking establishments, a foundry, and several other smaller industries.

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* See Publication No. 20, listed at the end of this volume.

Employees of Similar Occupations.—Employees of similar occupations gathered in numbers where each establishment is too small a unit for separate group-payment schemes, utilize their unions or benefit associations as a basis of group purchase for medical care. Usually the composition of the group has been limited to members in the same geographical area, as in the case of the United Mine Workers of America, District 22, Wyoming; the Silverton Coal Miners Union; the New York Letter Carriers Association; and the Women's Local Union of the Bureau of Engraving and Printing in Washington, D. C.

In some instances different unions located in the same geographical area have found it desirable to cooperate to provide medical care for their members. Illustrations of this are the plans in operation under the Union Labor Benefit League of Los Angeles and the Employees Mutual Benefit Association of Milwaukee.

Some of the unaffiliated railroad brotherhoods have combined the provision of medical care for chronic or long-term illnesses with cash benefits for illness. The brotherhoods have provided cash benefits for many years.

Racial Groups.—Racial groups in metropolitan areas have at various times offered more or less complete medical care to members of their associations. For example, in Chicago the Jewish Workers' Circle, composed of more than 1,000 families, has a contractual arrangement with certain members of the medical staff of the Mt. Sinai Hospital for office services. The patients pay $1 per month per family for office care. The attending physicians are engaged on a part-time salary basis and receive the patients in their private offices. For many years French and German mutual benevolent societies in the city of San Francisco have been in continuous and successful operation. Each of these institutions owns and operates a hospital in which members of the benefit society receive medical care. These hospitals are also open to the general public.

Lodges and Fraternal Orders.—Medical benefits offered through membership in local or national branches of fraternal orders have been in operation for many decades. The national bodies have, for the most part, limited their services to the provision of medical care for children (as in the case of the

Shriners' Hospital for orthopedic cases) or for the care of other long-term illnesses for members, particularly those suffering from tuberculosis. The local branches have restricted their provisions of medical care almost exclusively to contractual arrangements with one or more individual physicians who, for small fixed, annual fees, agree to provide office care and to make home calls upon members. In many instances the " lodge practice " has not been considered of satisfactory quality by the medical profession or by the members of the societies, for it has often been characterized by hasty examinations and superficial treatment. The medical profession is opposed to any extension of lodge practice of the customary standards.

University Student Health Services.—Personnel and facilities in some 153 institutions of higher learning in this country have been organized to provide, in greater or lesser degree, medical care for students during periods of acute illness. These services are in addition to the other health procedures such as informational hygiene through academic courses and the personal advice of physical directors or medical counselors; and are also in addition to the first-aid care provided for injuries incurred during required physical exercise or college athletics.

A study by the Committee on the Costs of Medical Care [1] analyzed the nature and costs of medical services in six universities with a total enrollment of 40,000 students. Four of the student health services studied were practically self-supporting. That is to say, the fees paid by the students served nearly sufficed to finance the fixed charges and operating costs of the organization. With due regard to variations in the scope and amount of service provided, the cost of health supervision and medical care in four institutions (Michigan, Minnesota, California, and Oregon) ranged from as little as $9.66 where the provisions were simplest to $16.78 per student eligible where the services were the most complete and extensive. If these four universities were to operate their student health services on an annual basis, from $14 to $24 would be necessary to provide comprehensive medical care for a population of the age and type of the American college student.

If health services similar to those in the institutions studied in this survey were offered in the 569 chief colleges and universities in the United States to their total enrollment of more than 800,000 students,* about 0.6 per cent of the population of this country would, for the period of the school year, be eligible to extensive medical care and health supervision for a moderate fee. If, in addition, the university health services were expanded to include faculty members and their families and employees of the institutions, at least 300,000 more individuals might be included in the service. Some universities have already admitted members of the faculty and their families, or employees and their dependents, or both, to the privilege of student health services. It is also not beyond the range of possibility that the medical services of the university group might be extended to include the general population of the community in which the educational institution is established.

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[1] See Publication No. 19, listed at the end of this volume.

Community Groups.—In some areas, voluntary associations with members drawn from the entire community have been formed with all residents (except those excluded because of age, sex, financial status, or physical disabilities) eligible for admission. These associations have been few in number and have grown very slowly. Some of those with the longest experience are the nursing service and insurance for medical care sponsored by the Thomas Thompson Trust in Brattleboro, Vermont †; the New Bedford (Massachusetts) Health Association; the Grinnell Hospital Association (Iowa); and the Rockford Hospital Association (Illinois). More recent experiments, quite dissimilar in nature, are the Bassett Hospital Guild in Cooperstown, New York,‡ and the Trinity Hospital Medical Insurance Plan in Little Rock, Arkansas.

BASES OF FINANCING

Fixed Payments by Employees or Individuals.—The essence of a group-payment plan is the fixed, periodic contribution of the potential beneficiary. The contribution may be made at different intervals as in the case of the 25 cent payment weekly by the textile-mill employees in Roanoke Rapids, the $1 monthly contribution by members of the Electric Railway Employees

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* *The World Almanac,* 1932, based on the 1931 Education Directory of the United States Bureau of Education, Department of the Interior.

† See Publication No. 17, listed at the end of this volume and also p. 476.

‡ *Cf. Journal of the American Medical Association,* July 9, 1932, Vol. 99, p. 156-158.

Benefit Association in Dallas to the Dallas Medical and Surgical Clinic, or the $7.50 quarterly contribution made by subscribers to the plan of the Trinity Hospital in Little Rock, Arkansas. The amount of the periodic contribution is influenced, of course, by the scope of the medical services offered, by the inclusion or exclusion of family members, and by the prevailing fees for medical service in the respective communities. For example: a general plan may include a monthly contribution of $1 for the services of medical practitioners only and the use of their office equipment * as in the case of the Dallas Light and Power Company; $2 monthly may suffice to cover complete medical and hospital care to the individual (with an additional $2 for each family member) as was at one time the provision in the contract of the Trinity Hospital in Little Rock, Arkansas; a $2 monthly payment may include complete medical and hospital care to the employee, and only the care of physicians for family members, as was the case with the Los Angeles County employees in 1931; or $3 per month may be charged each employee (whether single or married) for medical and hospital care for himself and family members or total dependents, the practice in the Stanocola Employees' Medical and Hospital Association. A per-capita fee of fixed amount per eligible person (with extra assessments for family members) has the disadvantage of raising the fixed, periodic payments above a reasonable level for the heads of large families or for employees with a large number of dependents.

The agreements to provide medical services to the employees of the Federal Reserve Bank of Dallas and the Dallas Street Railway Employees Benefit Association have recently been discontinued under the following circumstances: In January, 1932, action was taken by the Dallas County Medical Society declaring the two contracts to be unethical according to the by-laws of the local society and the Code of Ethics of the American Medical Association. Since the medical practitioners of the clinic refused to discontinue the contracts voluntarily until such a time as other arrangements could be made for adequate medical service to be given the insured groups under some acceptable plan, they were indefinitely suspended from

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* The practitioners associated with the Dallas Medical and Surgical Clinic.

the society by a majority vote of its members. The action of the Dallas County Medical Society was sustained by the Council of the Texas State Medical Association and by the Judicial Council of the American Medical Association.

The Judicial Council of the American Medical Association did not declare these two specific contracts to be unethical according to the standards which had been established by a published statement of the Judicial Council in 1927. The decision handed down by the Judicial Council reads in part as follows:

> "It is contended by the appellants that these contracts are not in violation of all or any of five conditions which the Judicial Council has declared at various times are conditions, which obtaining, make a contract unethical. The Dallas County Medical Society which sentenced these appellants to suspension contended that these contracts violated all five of these conditions. When, in its constitutional function as authority over ethical matters, the Judicial Council expounds the subject of contract practice and lays down certain principles which when present create an unethical contract it is not to be assumed that those are the only principles which may have that effect. A fundamental of medical ethics is that anything which in effect is opposed to the ultimate good of the people at large is against sound public policy and therefore unethical. On the five points mentioned the appellants presented a strong argument which might be convincing if a narrow or local view only is considered. Nevertheless the Judicial Council is of the unanimous opinion that this type of contract is unethical on the basis of being contrary to sound public policy."

On the receipt of this decision the officers of the Federal Reserve Bank and of the Railway Employees Benefit Association were notified by the Dallas Medical and Surgical Clinic that the contracts would be cancelled, effective in thirty days as provided in the contracts, and it became necessary for these groups of employees to make other arrangements for the purchase of medical care.

Joint Employer and Employee Sponsorship.—The largest proportion of the group-payment arrangements are financed primarily through fixed, periodic payments by groups of individuals rather than through the company treasury. In some instances, the employer of a participating group supplements the employees' regular contributions by various indirect benefits such as providing free use of buildings, paying part or all of the salaries of the medical staff, or selling supplies or plant and equipment to the groups of individuals at exceedingly low prices. Many of the hospital buildings utilized by the railroad employees' associations are provided by the "companies."

Sometimes the company retains title to the plant, permitting the association to use it free of charge. In other cases the company guarantees the deficit of each month's or year's operating expenses.

A large oil refinery in the South contributed indirectly to its employees' mutual benefit association in the sale to the association of a building appropriately constructed for use as a clinic, at a price much lower than could have been obtained by a private purchaser in the same community.

In Roanoke Rapids, four textile mills pay the salaries of five physicians and three visiting nurses, and (together with the local power company) also originally provided the capital funds for the erection of the local hospital which is used by the medical practitioners and the residents of the community. The employees contribute 25 cents per week through a payroll check-off, and these contributions pay for the support of the local hospital.* Employees and their dependents are entitled to the services of physicians in the office, home and hospital, to all necessary hospital care, and to visiting nursing service. The quality of the care rendered is good. The organization was studied exhaustively and some of the principal conclusions drawn from the study by the investigators may be quoted here:

> Group purchase of medical care by the fixed, periodic payment of small sums effects the consequence that:
>
> (*a*) More money becomes available for medical facilities with this scheme than without it.
>
> (*b*) An enlarged program of medical care, including preventive with diagnostic and therapeutic services, becomes feasible.
>
> (*c*) By eliminating the customary fee-for-service arrangement, more people who need care become enabled to obtain it.
>
> (*d*) Even if apportioned per wage-earner rather than per family, costs become sufficiently equalized among families so that the burdens which devolve from the uneven incidence of sickness and the unequal needs for care are practically eliminated.
>
> The financial returns which accrue to the professional personnel certainly need not be smaller and can easily be larger under these circumstances than in non-organized private practice in similar communities; and these financial returns can attain a degree of stability which does not ordinarily obtain for the independent, private practitioner.
>
> The Roanoke Rapids plan for organized medical care may be applicable to communities elsewhere if the local circumstances meet two main requirements:
>
> (*a*) There must be creative leadership—disinterested and informed—in which both lay and professional groups have confidence. There must be professional

leadership to guarantee the maintenance of high standards of performance in the medical organization.

(*b*) There must be a homogeneous unit population to initiate the provision of organized medical facilities and group payment. Whether this population acts as a unit through employment in one or more industries, through geographical location (as in a county, a town, a school district, a fraction of a city) or because of a social bond, it must be substantially free from adverse selection with respect to morbidity; it should probably include at least 5,000 persons and preferably 10,000; it should be essentially uniform in economic status. After primary establishment for a homogeneous unit population, the services of the organization can be extended to other local population groups.

The scope of the medical organization should include at least the services of physicians and public health nurses and provision for hospital care. It seems desirable that it should include in addition the services of dentists, pharmacists, and other qualified practitioners.*

In those cases where employee participation in a group-payment plan is compulsory (from the president down) it is not uncommon for the higher-paid executives to utilize other medical services—in this way relieving some of the strain upon the medical staff employed or upon the personnel or facilities with which the group has a contract and to some extent avoiding antagonism toward the service on the part of local medical practitioners who are not included in the contractual arrangements.

The Dallas Electric Railway Company contributed directly to the medical care of its employees through a payment of 75 cents per person per month to a private group clinic. This amount was intended to cover the costs of any necessary X-ray and other special diagnostic procedures and was in addition to a payment of $1 per month made by each employee for the complete services of medical practitioners at the clinic and in the hospital when hospitalization was necessary.

Employer Sponsorship.—In a few business enterprises medical care for groups of patients is financed entirely under the auspices of the employer, with all payments made from the company treasury without direct participation by the employees. One of the most extensive arrangements of this kind is that conducted by the Endicott Johnson Corporation, Binghamton, New York, a large manufacturer of shoes and tanned leather. The arrangement covers 15,000 workers and their families and provides complete medical care for every type of illness in all age groups. The annual expenditures for this service are approximately $800,000, and it is estimated that about 90 per cent of the workers and their families use the service each year.*

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* See Publication No. 20, listed at the end of this volume.

The medical service includes three medical centers provided with hospital facilities, a small first-aid station and clinic, as well as several travelling clinics in the cities of Binghamton, Johnson City, and Endicott, New York. There is a full-time staff of more than 100 persons, consisting in 1928 of 28 physicians, 4 dentists, 5 dental hygienists, 2 physical therapists, 67 trained nurses, 4 bacteriologists, 4 pharmacists, 17 technicians, and 16 clerks and office assistants. The volume of the medical organization's activities during 1928 included 87,400 house calls and 118,740 office visits. In addition to its own medical service, the Endicott Johnson Corporation paid $250,000 to hospitals in the community and $40,000 to specialists and consultants. Other payments were made to the managers of various tuberculosis cottages and sanatoria where employees received medical care.

The quality of the medical care has been judged as of reasonably high standards according to the opinions of expert investigators who visited the plant. The following quotations are cited from Publication No. 5 of the Committee on the Costs of Medical Care:

> "My general impression of the medical work in the Endicott Johnson organization is that it is good. The actual treatment of disease is favorably comparable with that in the district and probably with that of general practice in any small city. In some respects, notably relating to preventive medicine and obstetrics it is probably superior to that of the smaller cities generally, and certainly far better than that in such cities among the working classes." †
>
> "It appears that the work of the Endicott Johnson surgeons compares very favorably with that of surgeons in other communities of the same size and probably in some respects excels it." ‡
>
> "The general organization of the hospitals and clinics associated with the Endicott Johnson Medical Service is something above the level usually found in non-teaching institutions in communities of this size. There are evident defects, the correction of which is less a matter of finance than of sound planning and execution." §

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* See Publication No. 5, listed at the end of this volume.

† Quotation from the report of Dr. Nellis B. Foster, Associate Professor of Medicine in the Medical College of Cornell University, New York.

‡ Quotation from the report of Dr. Ransom S. Hooker, Associate Professor of Clinical Surgery in the College of Physicians and Surgeons, Columbia University, New York.

§ Quotation from the report of Michael M. Davis, Ph.D., Director for Medical Service of the Julius Rosenwald Fund, Chicago.

One other illustration of industrial medical service financed directly from the company treasury may be cited: the complete medical service of the Homestake Mining Company, Lead, South Dakota.*

The Homestake Mining Company engages in the mining of gold in the Black Hills district of South Dakota. During 1930, the company and its subsidiaries employed an average of 1,855 persons, more than 1,600 of whom worked at Lead, with others in surrounding areas. At Lead the company maintains a twenty-six-bed hospital and a staff of five full-time physicians who care for the company's personnel and their families in Lead and the immediate vicinity. Another physician resides at Nemo, South Dakota where subsidiary activities are carried on, and cares for families and their dependents. Company workers in other communities are cared for by local practitioners either on a part-time salary or on a fee basis. When there is need, or the occasion permits, employees or their dependents at the outlying points go to Lead for hospital care. Until 1910, the employees paid for their medical service through a monthly check-off and the physicians served on a contract basis. Since 1910, the company has taken over the medical work and the physicians have been employed on a full-time salary basis.

The Homestake Mining Company furnishes without charge all necessary medical and hospital care to the employees and their dependents. Normal obstetric cases are not ordinarily admitted to the hospital unless the patient's residence is unsuitable for confinement or is at a great distance. All required drugs and medicines are provided without charge. Refractions are performed by the medical staff, and eye-glasses are furnished to the patient at cost. The physicians are not permitted to engage in private practice, nor does the hospital admit private patients except in emergency. The total cost of medical services to the employees was $12.59 per capita in the year 1930, not including allowances for interest, depreciation, taxes, or insurance. Of a total of $65,000 paid by the company on behalf of patients, approximately $29,000 went to physicians and $7,500 to registered nurses. Of the average per-capita cost of $14.88 (including interest, depreciation, taxes, service are approximately $800,000, and it is estimated that about 90 per cent of the workers and their families use the service each year.*

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The medical service includes three medical centers provided with hospital facilities, a small first-aid station and clinic, as well as several travelling clinics in the cities of Binghamton, Johnson City, and Endicott, New York. There is a full-time staff of more than 100 persons, consisting in 1928 of 28 physicians, 4 dentists, 5 dental hygienists, 2 physical therapists, 67 trained nurses, 4 bacteriologists, 4 pharmacists, 17 technicians, and 16 clerks and office assistants. The volume of the medical organization's activities during 1928 included 87,400 house calls and 118,740 office visits. In addition to its own medical service, the Endicott Johnson Corporation paid $250,000 to hospitals in the community and $40,000 to specialists and consultants. Other payments were made to the managers of various tuberculosis cottages and sanatoria where employees received medical care.

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The Homestake Mining Company furnishes without charge all necessary medical and hospital care to the employees and their dependents. Normal obstetric cases are not ordinarily admitted to the hospital unless the patient's residence is unsuitable for confinement or is at a great distance. All required drugs and medicines are provided without charge. Refractions are performed by the medical staff, and eye-glasses are furnished to the patient at cost. The physicians are not permitted to engage in private practice, nor does the hospital admit private patients except in emergency. The total cost of medical services to the employees was $12.59 per capita in the year 1930, not including allowances for interest, depreciation, taxes, or insurance. Of a total of $65,000 paid by the company on behalf of patients, approximately $29,000 went to physicians and $7,500 to registered nurses. Of the average per-capita cost of $14.88 (including interest, depreciation, taxes, and insurance) it was estimated that $7 was properly chargeable against hospital care, $7.18 for the care of ambulatory cases, and 70 cents for laboratory and X-ray treatments.

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* See Publication No. 18, listed at the end of this volume.

The following statement by the author of Publication No. 18 (p. 43-45) indicates his general conclusions concerning the advantages and limitations of the Homestake Medical Service.

"The company does not regard its medical service as philanthropic or charitable work but maintains the organization in order to improve the health and efficiency of the employees, to reduce labor turnover, and to strengthen morale, and since workers undoubtedly take the factor of 'free' medical service into account when accepting employment, the provision of medical service may properly be regarded not as a free gift, but as a form of wages—wages 'in kind.' It would be a mere bookkeeping device to credit each employee with an additional $3.24 a month, and to deduct this amount from his wages to pay for the maintenance of the medical department.

"The medical service is, on the whole, considered satisfactory by its patients, although some individuals utilized outside facilities at their own expense. The company medical staff and the hospital are well regarded by the people of the community.

"The incomes of the Homestake physicians compare favorably with those of private practitioners in South Dakota and adjacent states.

"On the whole, the physicians of the service believe that their type of practice possesses advantages over private practice both from the patient's and the physician's point of view. Chief among these advantages is the fact that patients receive medical attention earlier in sickness and irrespective of their ability to pay. Other advantages are the stability of the physicians' income, the regular hours, the annual vacation with pay, and the opportunity for more frequent consultations.

"Although the Homestake physicians are sometimes called unnecessarily, and although they give office care to many patients with trivial complaints, they do not believe that they are imposed upon or that the abuse of the privilege of medical service without specific charge is significant.

"In the opinion of the physicians concerned, a direct financial relation between physician and patient—the payment of a fee for each service—is neither essential to the performance of service of good quality nor to the maintenance of a close and continuing personal relationship."

CHAPTER XXXI

NON-PROFIT ORGANIZATION OF GROUP PAYMENT FOR MEDICAL CARE.—(*Continued*)

Great variations may be observed in the scope of the medical services offered under different types of group-payment arrangements. Any or all of the following types of service may be provided: office care by physicians; house calls by physicians; complete attendance by physicians, including surgery; hospitalization; private duty nursing.

GROUP PAYMENT FOR THE SERVICES OF PHYSICIANS

An agreement providing merely for physicians' office care was in effect between the Federal Reserve Bank of Dallas and a local private group clinic.* Upon the payment of $200 per month by the bank to the clinic, the services of a medical practitioner were made available to bank officers and employees for medical examinations and for the treatment of minor illnesses. A full-time nurse, employed by the bank, gave preliminary aid and advice to employees pending daily visits of a member of the clinic staff who held an office hour in the bank building. Employees were not required to accept the service and were at liberty to employ their family physicians at their own expense if they so desired. The services did not include any home visits and did not include medical attendance at the clinic offices or in any of the local hospitals.

In exchange for the $2,400 annual payment, the physician especially assigned to the work at the bank gave approximately 1,240 treatments and examinations yearly. From the standpoint of the clinic group, therefore, the revenue was considered adequate, and the officers of the bank also felt that the arrangement was one which gave them full value for their expenditure. The following statement is quoted from an executive of the bank and was issued late in 1931:

> "Our officers heartily approve of the plan and it has received the enthusiastic support and cooperation of our employees. By her constant attendance upon

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* See, however, p. 466.

our employees and acquaintance with them and their problems, our nurse has rendered invaluable service, and those of the physician have been of equal worth in the matter of preventing prolonged illness and epidemics among our employees by catching illnesses at their incipiency, and by discovering physical defects in time for them to be remedied before becoming serious. The physicians furnished by the Clinic have, in every case, been well-trained and qualified doctors who have immediately obtained and held the confidence of our officers and employees. So convinced are we of the wisdom of maintaining this health service that in no event would we dispense with it."

A slightly different arrangement for office care by physicians is provided by the Welfare Association of a department store in a western city of 15,000 inhabitants. The members of the Welfare Association contribute equal amounts monthly (75 cents per person) into a common fund. The receipts are used for the payment for medical care to individual members according to a standard fee schedule. Each employee is entitled to a maximum allowance of $75 for medical care in any one year.

A group of twenty doctors in a western city of 300,000 inhabitants has an arrangement by which the members of a local mutual benefit association may consult one of the clinic physicians free of charge during the regular office hour which he conducts at the general office of the company which employs the members of the association. For this service the clinic receives $1 per month from each individual through the mutual benefit association. In addition, the company pays a flat amount each month to supplement the contributions of employees. A separate fund administered by the employees' association also may be drawn upon to pay the costs of hospitalization up to $50 per case, with any excess charges paid by the employees. The hospital benefit requires a small annual contribution over and above the amount necessary to cover the costs of professional services by physicians. This agreement, it will be observed, provides three stages of financial responsibility on the part of a person eligible for medical care. As an employee he may receive office care and other services of physicians at no additional cost; as a contributor to the hospital fund he may receive a limited amount of hospital care for himself; beyond this point he must pay his cost of medical care on a fee basis.

The following quotation gives the details of a somewhat similar arrangement:

> "A clinic of 22 practitioners in a southern city of 300,000 population has arrangements with various employees' associations to furnish medical care but not hospitalization at a maximum fee of $1 per person per month, with the possibility that the cost to the association may be less than this amount. The work is done according to an agreed fee schedule. If, for example, a patient undergoes an appendix operation the clinic charges the association for this service; if he requires merely one office call during the year, the association pays only for that one call. If the total charges do not reach the maximum figure of $1 per person per month, the association pays only the actual amount charged. This arrangement was adopted as a means of preventing excessive demands for service. The manager of the clinic states that the plan has not been in operation long enough to demonstrate whether or not a large volume of business can be handled at these rates. The clinic is, however, taking the attitude that these fees are about all the association can afford, and is striving to make its medical and surgical costs meet the figures. The manager believes that when the clinic operates its own hospital, as it plans to do in the near future, costs will materially decrease. Services given under this plan exclude dentistry, maternity care, treatment for venereal diseases and for drug addiction." *

It will be observed that most contracts have a definite limitation upon the types of medical service which will be covered in the agreement. It is customary to exclude from benefits all care for cases of venereal diseases, mental disorders, tuberculosis, certain chronic illnesses, and injuries arising from acts which are in violation of the law. Maternity care is frequently included, although it is not uncommon for a "waiting period" or an additional charge to be made a part of the contract.

No plans have been continuously in operation which have attempted to give the patients free choice of physicians. Plans have been proposed which would allow such procedures, but in every instance the group of consumers has found that the total costs were either too unpredictable or too large to justify the continuation of the plan. It has always been found necessary to effect a working agreement whereby the total costs of medical services could be determined with certainty. It should be mentioned at this point that many of the university health services, as well as the services provided for employees of industrial enterprises, are limited to the ministrations of medical practitioners and do not include special services in hospi-

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* *The Purchase of Medical Care Through Fixed Periodic Payments,* by Pierce Williams (National Bureau of Economic Research, Inc., New York, 1932), p. 223-224.

tals or the care of private duty nurses. Contrariwise, organizations like the Homestake and the Roanoke Rapids medical services, previously cited, provide unlimited hospital care. At the University of California unlimited hospital service is included in the health service fee charged annually against students, whereas at Oregon State Agricultural College and at Cornell University and the University of Michigan from ten to thirty days are allowed without additional charge to the patient. The University of Minnesota provides a maximum of two days of hospitalization for each illness, whereas at Yale University medical care is limited to physicians' and dentists' services and does not include hospitalization.

GROUP PAYMENT FOR NURSING SERVICE

Only one special association for the provision of nursing service has come to the attention of the Committee on the Costs of Medical Care.* This is the Association for Nursing Services at Brattleboro, Vermont, which charges yearly premiums at a rate of $2 for single persons, $3 for married couples, and 50 cents for children under 16 years of age. When a member of the Association for Nursing Service is ill at home, visiting graduate nurses are provided at one-half the regular charges; graduate private duty nurses at one-third the usual charges (or $14 per week); and attendant nurses at one-half the usual charges (or $11.50 to $15 per week). In addition to the nursing service in the home, special nursing service is provided in the hospital to the extent of two-thirds of the cost of three days' special nursing after a major operation. One-half the cost of the nurses in cases of pneumonia is also met by the association. Benefits not to exceed $200 are given for any one case of sickness.

The number of members expanded from 5 in 1926 to 821 in February, 1932. Up to November, 1930, 47 claims were paid, benefitting 41 individuals and amounting to $768. The Thomas Thompson Trust Fund originally contributed $1,000 to the Association for Nursing Services. This contribution, plus the premiums, has been more than sufficient to provide the benefits agreed upon. The cost of protection per person per year has been $1.01 and the net amount of money on hand with due allowance for contingent claims was about $1,400 in November, 1930.

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* See Publication No. 17, listed at the end of this volume.

HOSPITAL INSURANCE

For at least a decade lay promoters or philanthropic non-profit groups have made attempts to promote hospital insurance. In nearly every instance, however, the policies for this type of insurance have been sold individually, the policyholder has been given free choice among a group of hospitals, the payments for medical care (by the association) have been based upon amount of service received, and the groups have been limited to persons of specified age and civil and economic status.

The following paragraphs will describe several types of "hospital insurance" plans, with the discussion limited to individual policy schemes of several non-profit associations. Group insurance for hospitalization has recently become a matter of considerable interest to hospital administrators, and several plans will be described under both proprietary and voluntary non-profit auspices.

Individual Insurance Policies.—The Thompson Benefit Association for Hospital Service in Brattleboro, Vermont,* offers benefits for the care of hospitalized illnesses. The yearly premiums which may be paid semi-annually or quarterly are $5 for single persons, $7.50 for married couples, and $1 for children under 16.

Members of the association are protected against the full cost of hospitalization above $30 but not in excess of $300. This provision includes the surgeon's fees and the cost of hospital accommodations in the Brattleboro Memorial Hospital. Non-surgical cases (with the exception of obstetrical and chronic cases) are reimbursed for one-half the cost of regular hospital accommodations within the limits of $30 to $300, excluding the physician's charges. In cases of emergency, the patient may be admitted to some other hospital and the same benefits received. A schedule of fees, ranging from $5 to $200 drawn up by the two local surgeons, is used as the basis of charges made by physicians and surgeons to members. The hospital benefit association was organized in 1927 with a grant of $1,500 from the Thompson Trust. The premiums charged have been insufficient to cover the benefits, and additional funds have been provided by the trustees. The number of persons covered by the hospital insurance scheme increased from 62 in 1927 to 896 in February, 1932. Up to November 1, 1930, 42 claims were paid, benefitting 41 individuals and amounting to $5,736. Of the total payments, physicians received over $3,300, and hospitals over $2,400.

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* See Publication No. 17, listed at the end of this volume.

In Rockford, Illinois, a cooperative plan has been organized under the title of the Rockford Association. Any resident of the community is eligible to membership, provided he is over 15 years of age and is free from chronic illness and from all physical defects requiring hospitalization. The plan has been in operation since 1912 and is incorporated as a non-profit association under the laws of Illinois. Membership has ranged during this period from 500 to 1,000 members. An entrance fee of $10 is required, plus annual dues of $1. In addition, a patient makes a contribution of 10 cents weekly which entitles him—for a period not to exceed six weeks during any one year—to board and room in any local hospital in accommodations which are priced at not more than $36 per week. The benefits also include operating room fees up to $20. Cases not hospitalized are entitled to the services of a visiting nurse or, in the case of contagious disease, to a registered nurse for a period of six weeks. Half memberships are granted for 5 cents a week, and these provide a hospital benefit of $18 weekly for board and room and $10 for operating room service. The plan has not grown rapidly and no large groups of employees have participated in the scheme.

An arrangement similar in many respects to that in effect in Rockford is conducted by a hospital in Grinnell, Iowa, where an annual fee of $8 per year entitles the beneficiary to three weeks of hospital care, including board, room, and regular nurses, but not the fees for operating room, delivery room, X-ray room, dressings, or a special nurse. Services of physicians and surgeons are also excluded from the benefits. Students in Grinnell College, which is located in the same town (of 5,000 inhabitants), are entitled to memberships at $5 per year. Members of the association are admitted to the hospital only upon the recommendation of a physician. The insurance becomes effective 15 days after the date of the policy. In 1930, policies were purchased by 316 residents of the city (representing 250 families) and by about 200 college students. Approximately 75 per cent of the policyholders have renewed their subscriptions annually since the inception of the plan in 1921.

Group Insurance Policies—Non-Profit Auspices.—Each of the foregoing plans has been organized for service to the general public, with contracts made available to individuals. None of them has been developed to include a large number of persons. Where, however, the contracts have been drawn between the medical institution and groups of employees rather than individuals, memberships have increased much more rapidly. The three years' experience of the Baylor Hospital in Dallas, Texas, and the recent developments in the Touro Infirmary and in the Hahnemann Homeopathic Hospital, Philadelphia, may be cited as illustrations of group insurance policies.

The contracts of the three institutions are similar in benefits allowed and in their direct contractual relationship between the hospital and the group insured. For example, the Baylor Hospital plan provides, for an annual fee of $6 per person, a maximum of 21 days of hospital care, with a 33 per cent discount after the expiration of this period. The hospital accommodations allowed are semi-private and the benefits include operating room service, anæsthetics, laboratory fees, routine medicines, surgical dressings, and hypodermics. An extra charge—which is 50 per cent of the regular rates—is made for X-ray services and all maternity care. More than 5,000 persons are eligible for hospital care on this basis.

The Touro Infirmary has recently entered into a contract with about 150 families of the employees of the New Orleans *Item Tribune*, a daily newspaper. For a fee of $10, the patient is entitled to a $5.50 private room for 30 days, as well as the use of the operating room and all laboratory services and medicines. X-ray and all other special services are provided at a one-third discount for both in-patient and out-patient care. Members of the family of insured persons are given a one-third discount on all hospital services.

A somewhat different arrangement has been established between the Hahnemann Homeopathic Hospital and 500 persons employed by the *Philadelphia Public Record* and other establishments. For an annual fee of $12, the patient is entitled to complete hospital care in an $8 private room for 30 days in one year, and is furnished all necessary X-ray and other special services without additional charge. Maternity cases are covered by the policy after nine months' membership. Only employed persons are eligible for the benefits. Contracts are obtained through the medium of paid solicitors who receive 25 per cent of the first year's premiums and 10 per cent during the second year.

The detailed experiences of the Baylor Hospital suggest the probable results for the other institutions. The first contract was drawn in the autumn of 1930 between the hospital and the Teachers' Association of Dallas. Approximately 2,000 teachers were insured for hospital care at a rate of $6 per person per year. Later, other groups were also permitted to join the scheme, and on March 1, 1932, 36 different contracts were in effect, covering approximately 4,000 individuals. Since the plan was put into operation, it has been found desirable to offer the service at somewhat different rates to the various groups, the annual rate varying with the nature of employment and with the types of room accommodations to which the beneficiary is eligible.

During epidemics or public disasters the Baylor Hospital may discharge its legal responsibilities by repayment of twice the total amount of the individual patient's payments during the preceding twelve months.* During a period of time in which contracts had been in effect for 52,000 patient-months, there had been cash receipts of $26,000. The hospital had admitted 444 policyholders and had rendered them 4,211 patient-days of care for patients. Of 444 policyholders admitted for medical service, 26 had stayed more than 21 days each.

The costs of these services according to the agreed schedule of fees in the hospital amounted to approximately $27,000, including $800 which represents contractual discounts for the 26 patients who stayed more than 21 days. Including the discount allowances, the average length of stay for each patient was approximately 9 days, the average hospital bill was $61 and the net cash receipt per patient-day of care rendered under the plan was $6.60. This average receipt per patient-day practically equalled the average per-capita cost of maintaining the hospital, including all the special services, the maintenance of private rooms, and the operation of the out-patient department.

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* Similar provisions are included in the Hahnemann Hospital and the Touro Infirmary agreements.

Not all groups have been equally profitable to the hospital from the financial point of view. Some groups of employees have required services whose stated value exceeds the amounts which have been paid in, whereas others have called for benefits much lower than the amounts paid to the institutions. Recently the rates on two of the larger groups have been raised because of the higher incidence of illness among the members of the group.

A series of testimonials placed in the hands of a member of the staff of the Committee on the Costs of Medical Care indicates that the insured groups are convinced of the benefits in their contracts with the hospital. These letters include communications from the municipal police and fire departments, executives of several local banks, and the employees of several newspapers, as well as of the largest department stores in Dallas.

In a communication describing the plan, Mr. J. F. Kimball points out the features which, in his opinion, should characterize a successful group hospitalization scheme. " The essential principles " which he cites are the following:

> " The organization should deal with groups, not with individual risks. The groups should be employed on a full-time basis, as intermittent employment allows opportunity for undue hospitalization. A total number of members should be fairly large to make the law of averages apply safely. The benefit should not include professional service of physicians, as this would encourage a tendency for physicians to permit unnecessary hospitalization. A long-time commitment to a fixed rate should be avoided in order that adjustments can be made on the basis of actual experience. Different types of employed groups should be admitted at different rates. There should be no intermediary in dealing with the employed groups."

Each of the foregoing plans is promoted and conducted by individual hospitals, and the benefits of hospital insurance are available only in those institutions. Attempts are now being made in several communities to organize special hospital insurance associations, supported by a group of voluntary non-profit hospitals. Up to the present (December, 1932) such a plan has been initiated by the Essex County Hospital, New Jersey, and is in contemplation by the Chicago Hospital Association. Several schemes under proprietary auspices have recently been inaugurated, by which a group of voluntary non-profit association hospitals accept patients according to an agreed daily rate and are paid from the net collections of a proprietary agency which promotes the plan.

Proprietary Hospital Insurance Associations.—There have recently been organized two types of proprietary plans by which groups of employed persons are insured for hospital care. The two plans resemble each other in the costs to the patients and in the hospital benefits to which policyholders are entitled. Each member pays a stated amount per year, a percentage of which is retained by the proprietary organization for expenses of promotion, selling, and collections. An amount equal to a designated sum per month per policyholder is paid into a fund to reimburse the hospital for services rendered.

In Dallas, Texas, and Elizabeth, New Jersey, the promoting organization pays the entire amount (50 cents per policyholder, monthly) to *one* institution, which then assumes full responsibility for the provision of hospital care according to the terms of the contract. In San Antonio and Houston, Texas, and in Newark, New Jersey, the amounts are turned over to a trust fund administered by a committee of *several* participating hospitals. Each of the hospitals guarantees the provision of care, and the participating hospitals are paid for services rendered to policyholders according to the rates and the kinds of services stipulated in the contracts. Policies are drawn for groups of employed persons with a minimum number (or a percentage of the total number) of any group of employees required to subscribe to the insurance plan. The memberships range from ten to several hundred employed persons, who may continue their contracts during unemployment by payment of dues one year in advance. Usually monthly or quarterly "fees" are collected, amounting to $9 per year, payable either through the employer, through an employees' association, or through voluntary arangements by which one employee collects from his associates at the end of each fiscal period when payments are due.

These hospital contracts, like those previously described, do not provide complete and unlimited hospital service to insured persons. They include (without additional charge) the use of a $5 private room or $4.50 semi-private room, operating room service, anæsthetics, general nursing care, medicines, surgical supplies, and routine laboratory tests during a period of hospitalization not to exceed a fixed number of days per year (usually 21). X-ray work is done at a discount, and a discount of one-fourth or one-third is also allowed on other hospital services after the maximum length of stay. In one hospital, the patient is entitled, as an ambulatory case, to a urinalysis and a blood pressure measurement once each year. The medical benefits under the contract do not include the services of physicians or surgeons (other than hospital house officers) or the services of private duty special nurses. Except for preliminary hospitalization pending diagnosis, the benefits do not include care for cases of pulmonary tuberculosis, venereal diseases, insanity, or virulent contagion, such as smallpox. Maternity cases are not included in the contract, but in these a discount (usually 50 per cent) from the regular hospital charges is allowed members in good standing after a continuous membership of nine months.

On being admitted to the hospital for care a member agrees to pay the balance of one year's dues in full, and also to accept accommodations temporarily in other than a semi-private or a private room if the latter are all occupied. In epidemics or public disasters, the hospital agrees to provide equivalent care at its own expense in some other local institution. If all hospitals are occupied to capacity, the hospital may discharge its legal liability by refunding to the insured member an amount equal to twice the sum which the member has paid to the hospital during the preceding twelve months.

Each member is allowed the privilege of selecting his own physician, for hospitals are "open" to all members of the local county medical societies. No insured member will be accepted under the contract except upon the recommendation of a physician, although emergency aid will be provided pending arrival of an attending physician. Each insured member is given an individual contract, which, except for accidents, becomes operative ten days after date of application. Funds paid to the hospital or hospitals are deposited in a trustee account, and are held as a trust fund to guarantee the performance of the services which the institutions undertake to provide.

The incomes of the promoting organizations are limited to one-third of the annual fees, and are neither decreased nor increased by the amounts of services rendered to beneficiaries. There is no incentive, therefore, for the proprietary intermediary association to influence the amount or quality of medical care provided to individual members under the contract. This financial arrangement avoids one of the dangers which may develop from allowing lay persons to influence or decide the amount or type of medical services provided. Decisions on these matters are entirely in the hands of the physicians and the hospital authorities. The contracts between the hospitals and the promoting organizations are of limited duration (one or two years).

Regardless of the amount of the annual dues, or the auspices of the hospital insurance program, there are several features of the foregoing contracts which make them economically desirable to one or more hospitals. A minimum revenue is assured through the regular contributions of the policyholders, whereas without insurance many of the patients might have been admitted as charity patients. The patient is required to pay his own physician, and is not likely to request unnecessary hospitalization merely to enjoy hospital benefits. The patient must pay in part for X-ray service and for long periods of hospitalization—provisions which protect the hospital against unreasonable requests and the high expense of chronic or incurable cases. The hospital gains financially if the insurance plan merely covers the additional costs of admitting more patients, once a certain number of private cases are accepted. The privilege of refunding money in case of epidemic or public disaster avoids some of the possibilities of legal suit for damages. The merits of the plan from the hospital's point of view are in some respects defects from the point of view of the patient. Hospital insurance cannot, of course, be considered a panacea for equalizing the uneven distribution of medical charges, and its advantages must be accepted or rejected according to the needs of each community and institution.

GROUP PAYMENT PLANS FOR COMPREHENSIVE MEDICAL SERVICE

Several group-payment arrangements have been in operation which permit individuals to purchase comprehensive medical care by a fixed, annual payment. Three illustrations will be cited because of the variation in the administrative arrangements under which they are conducted.

The first is a plan by which groups of employees, usually through mutual benefit associations, establish contracts with a group of private practitioners who guarantee to render complete professional services (with certain limitations), including hospitalization. A second plan is an arrangement by which a private clinic which owns and operates a hospital enters into contracts with groups of employees or individual members of the public who are allowed to make direct payments to the clinic and hospital rather than through an employees' association. A third plan is one by which a large group of employees, through their medical and hospital association, engage a full-time staff of physicians to provide medical care to the association's members and their families.

The first plan may be illustrated by the agreement between the employees' association of Los Angeles County and the Ross-Loos Medical Group, of the city of Los Angeles.* In this city more than 6,000 families are covered by annual medical service agreements at a cost of $2 per month per wage-earner member, regardless of the size of his family. Payments are made to the clinic monthly by the secretary-treasurer of the association, at the established rate per certified member. Not all members of the association subscribe for the medical services. Association dues are collected by monthly payroll deductions. No contributions are made by the employer toward the costs of the medical services.

Complete medical care is provided to eligible persons, including the services of doctors, nurses, hospitals, and outside consultants when necessary. Not more than three months' hospitalization will be given to any one individual during a twelve-month period. No types of disease are excluded from treatment, although the group of medical practitioners agrees to treat tuberculosis cases only until they are committed to a tuberculosis sanatorium and mental cases only until they are committed to a government institution. The patient is required to pay for medical supplies and appliances, such as insulin, eye-glasses, and crutches. House calls are charged for at a nominal rate, sufficient to prevent abuse of the privilege by members. The cost of hospitalization for family members must be borne by the patient himself and is not included in the agreement with the clinic.

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* Details of the contracts held by the Ross-Loos Medical Group have been procured from the medical practitioners and the employees of Los Angeles County through personal contact, by a representative of the Committee on the Costs of Medical Care. These details are presented more fully in Miscellaneous Contributions No. 18, now in preparation for the Committee.

In Little Rock, Arkansas, the Trinity Hospital and Clinic has recently effected an agreement with groups of employees for complete medical care at the rate of $2 per month per individual, the benefits to include the services of physicians and a maximum of six weeks' hospitalization. Payments to the hospital may be made through the financial offices of the employer or through voluntary collections by a member of an insured group. The clinic also accepts individual and family memberships, which must be paid quarterly in advance, on a monthly basis of $2.50 for an individual and $5 for the member and his family. A 10 per cent discount is allowed for a year's payment in advance. The service includes medical examinations; free immunization against smallpox, typhoid fever, and diphtheria; medical services, including surgery; and hospital care up to six weeks a year for each individual, including X-ray and laboratory service. Eye and dental work are excluded, as are certain medicines and the treatment of diagnosed cases of tuberculosis, mental disturbance, and venereal diseases. An extra charge is made for house calls.*

A unique and comprehensive arrangement for medical care has been established at Baton Rouge, Louisiana. The employees of the local Standard Oil Company refinery some years ago organized the Stanocola Employees Medical and Hospital Association for the purpose of providing medical care for themselves and their families.† They employ a surgeon, an eye-ear-nose-and-throat specialist, five general practitioners, and two nurses who are also laboratory technicians. A monthly deduction of $3 per member guarantees complete medical care for the employee and his family. The medical care includes professional services at the clinic, hospitalization, and house calls for all types of conditions. A maximum of $250 is allowed for any particular case to defray the costs of hospitalization and of special nursing. Maternity cases are not hospitalized at the expense of the association except when the attending physician considers hospitalization necessary for medical reasons. Hospitalization is paid for by the association at regular rates in two local non-profit association hospitals in the city of Baton Rouge. Membership in the association is voluntary and approximately 75 per cent of the white employees are members of the association. The association owns a clinic building as well as complete medical and surgical equipment.

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* *Cf. Sickness Insurance in the United States*, by C. Rufus Rorem (The Julius Rosenwald Fund, Chicago, 1932), p. 8-10.

† Further details concerning the procedures of the Stanocola Employees Medical and Hospital Association are set forth in a publication of the Julius Rosenwald Fund prepared by C. Rufus Rorem, Associate for Medical Services of the Rosenwald Fund, and Dr. J. H. Musser, Professor of Medicine, Tulane University, New Orleans, Louisiana.

For several years the association limited its benefits strictly to Standard Oil Company employees. More recently, however, employed groups in other industries in the community have requested permission to join the association. Up to the present time membership has not been granted to any outside groups, although the physician members of the clinic have been given the privilege of attending individuals in the community who might wish to avail themselves of their services on a regular fee basis.

A Group-Payment Plan Proposed by a County Medical Society.—During the summer and autumn of the year 1932, a committee of the Medical Society of Milwaukee County, Wisconsin, proposed the formation of "The Community Medical Service of Milwaukee," a plan intended to distribute the costs of medical care more equitably among local families. The Community Medical Service of Milwaukee, through a joint medical and lay executive board, proposes to enroll individuals and groups of persons who pay regular monthly dues (based on incomes) in return for designated professional services, to be provided by all physicians of the county society who wish to participate. Subscribers will be allowed "free choice" among the participating physicians when medical care is needed.

It is expected that "indigents" will make no payments of monthly dues, but will receive services from the tax-supported county hospital and dispensary. Arrangements might be effected for paying limited sums from taxes to the "Community Service" for the work of physicians in the homes of indigent patients. Numbers of "very low" income families will likewise receive free tax-supported services at the county hospital and dispensary, but will pay small monthly dues to cover the costs of calls and other medical care by physicians. Self-supporting citizens will pay monthly dues (based on incomes) sufficient to remunerate medical practitioners and institutions providing professional services to sick members of the groups.

For all income groups above the "indigent" class each subscriber, "when sick, must purchase direct from his doctor, in the usual manner of private practice, his entire medical care up to a certain amount (in any one year) before he is entitled to medical service under this plan." Arrangements may be made for deferred payment for such services. "The amount of medical care to be purchased direct is to be determined in proportion to income."

The net result of the financial arrangements is to protect the subscriber and his family only against the burden of catastrophic illnesses. Simple illnesses will continue to be paid for on a private-fee basis, provided a succession of such cases in a family does not bring the total expense beyond the specified limit for the income group to which a subscriber belongs. Preventive services, except as they are required after the preliminary fee limit has been reached, are not financed through the regular monthly dues.

It is expected that the Community Medical Service will collect dues from subscribers individually or through employers or the officers of benefit societies. Physicians will be recompensed from the net income of the Community Medical Service for services on behalf of subscribers according to a designated fee schedule, or on a pro-rata basis according to the amounts and types of services rendered. The Community Medical Service will be administered by a full-time medical director, and complaints concerning the medical service will be passed upon by a Grievance Board composed of physicians and laymen.

METHODS OF REMUNERATING MEDICAL PRACTITIONERS AND INSTITUTIONS

The foregoing examples of group agreements for medical care have utilized different methods of remunerating medical practitioners and institutions. The various methods of payment for professional services may be grouped under three main heads: (*a*) fees according to number and types of services; (*b*) capitation fees (according to number of persons enrolled) ; (*c*) full-time salaries or part-time retaining fee.

Very little use is made of the custom of remunerating practitioners in institutions according to the number and types of medical services rendered. Several of the plans, however, do use this basis for the payment of consultants and specialists whose services are required only occasionally. The fee per unit of service is not considered satisfactory for general practice or for routine treatment, particularly where treatment does not require the personal services of a physician—as in the case of physical therapy, X-ray work, or laboratory analysis. In San Antonio, Texas, and in the proposed arrangement in Houston, individual hospitals will be paid according to services rendered.

The capitation fee is much more widely used, but has been most successful only when the entire monthly or annual amounts have been paid to a group of physicians rather than to individual practitioners according to the number of patients enrolled with them. There are no plans which have come to the attention of the Committee on the Costs of Medical Care by which patients select individual physicians who are expected to treat them, within the limits of their capacities, for all types of illness according to a fixed fee per month or per year. This plan, which is used in England and is sometimes referred to as the " panel " system, is probably unsuitable for any except the services of general practitioners. The assignment of patients to specialists or consultants is not only impossible because of the difficulty of predicting each patient's needs for special types of care, but also medically undesirable because it interferes with the patient's receiving medical care according to special needs rather than previous arrangements.

The full-time salary is considered by patient-groups as the most satisfactory arrangement for remunerating physicians.

In some instances unusual volumes of medical service are requested of individual practitioners. In the long run there is a tendency for excessive services to result in lower quality; the condition is at times improved through the employment of additional practitioners or an increase of salaries for those engaged.

The part-time retainer fee, by which the physician engages in private practice as his main source of income, and treats "group-payment patients" in his "spare time," has almost invariably proved to be unsatisfactory. The patients complain that they receive medical care of an indifferent nature. This difficulty usually is an outcome of the fact that the medical practitioners or institutions are dissatisfied with the incomes they receive. When payments to medical practitioners are increased, the quality of medical service also tends to improve.

GENERAL COMMENTS ON VOLUNTARY GROUP-PAYMENT SCHEMES

From the foregoing illustrations it is apparent that there is no one type of group-purchase arrangement which is satisfactory under all conditions. The most satisfactory groups for group-payment schemes are those in which the members are homogeneous in some important characteristic such as place of occupation or residence, age, sex, or general economic condition. Such homogeneity has facilitated prediction of the amount of medical care which will be needed and has tended to make the participating members willing and ready to accept medical care under approximately the same external conditions. Groups of low-salaried workmen, for example, have not insisted upon service in elaborate offices, or use of elaborate equipment beyond the needs which the physicians consider medically necessary. The proximity of patients who form the groups has tended to improve the medical care rendered during emergencies and has conserved the energy of both the practitioner and the patient, as well as the time and money required to perform professional services. Mere residence in a community has not usually sufficed to unify a large group of patients.

Voluntary insurance plans have usually been devised to provide for the so-called "high-cost" or "catastrophic" illness and have not, in the main, covered simple illnesses which require relatively small expenditures. When the scope of the insurance has been extended to include minor disorders, the additional expenditure required has not been great and the preventive service rendered (which forestalls the necessity for more expensive medical services) has been increased. The treatment of chronic or long-term illnesses such as tuberculosis or mental disease has long been considered particularly appropriate for group payment, and has usually been financed through taxation rather than by equal and fixed, periodic payments from the potential beneficiaries.

The success or failure of a group-payment plan has varied according to its particular circumstances and objectives. For example, the quality of the medical service provided under a group-payment arrangement has, in some instances, exceeded that which had been available to the same person on the basis of individual financial arrangements with individual practitioners, even though the medical services are not technically or ideally adequate.

Sickness insurance has not been a panacea. Since some groups are unable to pay the total cost of adequate medical care to their members, many group-payment plans have attempted to include only those types of illnesses or that proportion of the costs of the illnesses which could be covered by annual dues commensurate with the annual incomes of the participating members.

Not all group-payment plans are efficiently administered. Some have involved unduly high overhead costs in collections, rentals, or solicitation. Others have not elicited the enthusiastic support of the professional groups which serve the patients. In still others, the members have abused their privileges of medical service.

The interests of both the medical profession and the public must be considered in the provision of medical care. Where medical practitioners and institutions have been adequately remunerated; where administrative arrangements and the working conditions have been such as to encourage maintenance of a high quality of service; where charges to members have not been increased unduly by overhead costs or abuse of privileges—where these conditions have existed, the group-payment principle of sickness insurance has yielded advantages both to the medical profession and to the public.

CHAPTER XXXII

TAXATION FOR MEDICAL CARE

Taxation as a method of group payment may be contrasted with fixed, periodic payments by the direct or potential beneficiaries. The use of tax funds for medical care represents community action to remedy certain undesirable conditions, and usually has been limited to the care of diseases or conditions which endangered the health of the community or interfered unduly with communal organization. Self-supporting taxpayers have usually been the contributors of the funds but not the direct recipients of the service provided.

GENERAL FACTS REGARDING TAX-SUPPORTED MEDICAL CARE

It has been previously shown that most of the hospital bed capacity in the United States is under government control, since about two-thirds of the 900,000 beds are in government institutions. Most of this bed capacity is provided for nervous and mental, and for tuberculosis and other contagious cases. The care of acute diseases among members of the general public has not been provided to the same degree by government agencies, for in 1928 of a total of 567,000 beds in government hospitals, there were only 115,000 beds for " general " hospital care. Of this total, 65,000 were under the control of city and county governments. The Federal Government has provided a substantial number of " general " hospital beds for present and former soldiers and sailors, and officials or employees of the Federal Government. Most of the facilities for tuberculosis and contagious diseases have been constructed through state and local government funds. The various government units devote only 20 per cent of their total bed capacity to general medical and surgical cases, and control only 30 per cent of the total beds for " general " cases in the United States.

Although the government institutions dominate the field of mental and tuberculosis care, and play a relatively minor rôle in general medical care, government hospitals care for a much larger number of the people in the latter field than in the former. It is estimated that in 1930 approximately eight million persons were admitted to hospitals in the United States.[*] Of this total number approximately 97 per cent were admitted to hospitals for "general and special" care, and 1½ per cent each for mental and tuberculosis services. Accordingly, although the government hospitals for mental and tuberculosis care provide more than one-half the "patient days" of care, they serve less than 200,000 of the total persons admitted annually to hospitals. On the other hand, although government hospitals for general and special medical and surgical care are a relatively small proportion of the total facilities for acute conditions, they admit nearly two and one-half million persons annually, or serve one-third of the total admissions for general medical and surgical treatment. Government hospitals for general and special medical and surgical conditions therefore serve ten or twelve times more persons than the number who utilize the tremendous bed capacities for the care of mental and tuberculosis cases.

Most government hospital care for acute cases has been limited exclusively to indigent or semi-indigent persons. The taxpayers have been expected to provide otherwise for their own medical services. The statutes of most government hospitals actually forbid the receipt of fees by attending practitioners; consequently neither the medical profession nor the general public has considered it just or desirable for self-supporting taxpayers to utilize these hospital accommodations. Rather than take steps to amend the laws, many communities have continued to exclude taxpayers from city or county hospitals, though they may stand ready to reimburse both hospital and attending physician, and though the government facilities may excel all others in the community.

The experience of recent years, during which the hospital has become a medical workshop as well as a domiciliary institution, has revealed that a large proportion of the general public cannot be classified as either "certified indigents" or "self-supporting taxpayers," when the need for medical care arises. Many people are able and willing to pay *some*, though not all, of the costs of hospitalization or professional care. The "indigent" person may find that he can pay something; and the taxpayer may need public assistance to enable him to return to health. Accordingly there have developed in the United States various devices by which taxation has supplemented individual resources in the provision of medical care, namely, the admission of full-pay or part-pay patients to the benefits of tax-provided facilities; and the provision of subsidy by governments to private practitioners and institutions rendering care to free or part-pay patients. Each of these extensions into the field of care for economic groups above the indigent level will be described and illustrated, not because they are widespread, but because they suggest possible advantages and limitations in the event they are more widely adopted.

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[*] *The Crisis in Hospital Finance*, Michael M. Davis and C. Rufus Rorem (University of Chicago Press, 1932), Chapter IV.

" PAY " PATIENTS IN GOVERNMENT HOSPITALS

Indigency is a relative term. A person may be self-supporting so far as food, shelter, and clothing for himself and his dependents are concerned, yet he may be unable to pay the full costs of a hospitalized illness for himself or a family member at the time of the illness. Regardless of the history of the patient's inability to pay, it is to the interest of the community to assist such a patient in obtaining necessary medical care. Some state, city, and county hospitals have adopted the policy of admitting patients to receive medical care, even though they are not public charges for other physical necessities. Many of the smaller city and county hospitals are the only institutions available to local practitioners. Consequently they admit persons of all economic groups: those who pay nothing to the hospital or to attending practitioners; those who pay all or part of the hospital bill only; and those who pay both hospital bills and fees to private physicians, according to local fee schedules or their respective abilities to pay. This custom prevails generally among the small city and county hospitals in North Carolina, South Carolina, Iowa, Wisconsin, Michigan, Maryland, and Pennsylvania. It has been less fully developed in the metropolitan urban areas; but for some years " public-ward " patients have been permitted to pay part of the cost of hospitalization in Cincinnati and Buffalo city hospitals, and in the latter case, physicians attend private cases in the municipal institution.

It is no longer necessary for a person to be destitute in order to receive public assistance (through remission of fixed charges, physicians' fees, or the costs of hospital care). It suffices that he is unable to pay the immediate costs of the necessary medical services over and above the means of subsistence for himself and his dependents. This principle is exemplified very clearly in the University of Wisconsin General Hospital, where a patient may receive medical care involving difficult diagnosis or expensive treatment, provided he is referred by a physician and is certified by a municipal or county court of law as unable to pay the costs.

The admission of paying patients to government general hospitals may result in several economic benefits. It may enable a person to obtain needed medical care without being reduced to general indigency and dependence upon the community after the period of illness. It may raise the general quality of medical services in the institution to meet the demands of paying patients. It tends to conserve the time of attending practitioners, who may serve both public and private patients with the same facilities and personnel. It increases the utilization of the public investment in hospitals and professional personnel, and medical practitioners are recompensed directly for services which they might otherwise be forced to render free of charge to the patient.

GOVERNMENT SUBSIDY OF PRIVATE INSTITUTIONS

The counterpart of the admission of paying patients to government hospitals is public subsidy of private hospitals for services to free or part-pay patients. The non-profit association hospital has in the past been forced to render medical care to the part-pay or free patient, who was nevertheless not destitute of all financial resources or income. Where no government facilities are available for the care of indigent patients, the communities have avoided the necessity of erecting government hospitals through an arrangement for flat-rate or per-capita payments to existing non-profit institutions. This procedure is particularly widespread in the medium-sized cities in the western parts of the United States, for example in Duluth, Minnesota, Phoenix, Arizona, and Sioux City, Iowa. The city of Newark, New Jersey, recently voted to reimburse local hospitals at the rate of $4 per day for services to " free " patients, upon approval of the municipal department of welfare. Payments may be made in the form of " block grants " determined in advance, a guarantee of payment for all or a portion of the operating deficits, or a " per-capita " arrangement based on the estimated number of free days of care or special services rendered. Such procedures usually require government authority to examine books of accounts and to recommend administrative procedures for internal economy. At the present time many of the voluntary hospitals are becoming more and more dependent upon government assistance, and a special subcommittee of the American Hospital Association recommended to the annual convention in Detroit (1932) that municipal subsidies for non-profit hospitals be encouraged as a permanent source of financial support.[*]

Two important state-wide programs have been inaugurated for the subsidy of non-profit hospitals and similar institutions. The best known is the arrangement by which Pennsylvania, through its Department of Welfare, has since 1922 made grants to private general hospitals for " free care " rendered to the public, and for which the hospitals are not otherwise directly or indirectly reimbursed. Hospitals wishing to receive " state aid " must render a complete financial report annually according to a uniform accounting schedule, and must permit representatives of the Department of Welfare to examine the records to determine whether patients were properly the recipients of free medical care. The payments apply only to services in the " public wards " where the physicians serve without remuneration, and must never exceed the per-capita cost of care ($3 per day). The 1929 legislature appropriated for the succeeding biennium $5,922,800, to be distributed among 160 private hospitals, and more than $2,000,000 for state aid to county, municipal and district general hospitals.[†]

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[*] "Report of the Committee on Bed Occupancy," *Proceedings of the American Hospital Association, 1932.*

[†] *Fifth Biennial Report of Secretary of Welfare, 1929-30.* Harrisburg, Commonwealth of Pennsylvania, p. 10-12, and 220. The procedure of the Duke Endowment in North and South Carolina is the reverse of the Pennsylvania method of utilizing private and tax funds conjointly. Among its other activities, the Duke Endowment reimburses all hospitals (which meet certain requirements of non-profit organization and administrative efficiency) at the rate of

Various federal and state grants are available for the care of special diseases and conditions, notably cancer and maternity. State appropriations in New York State are provided to " match " equally the funds of any county for the construction or maintenance of a public hospital, clinic, or health center. In this way the more prosperous sections contribute to the general welfare of the state, and there is applied the principle of " ability to pay " in the provision of medical care.

TAXATION FOR PRACTITIONERS' SERVICES

Physicians and dentists have from their earliest history rendered medical services to the poor without expectation or realization of direct payment through fees, taxation, or philanthropy. Of recent years it has been recognized as undesirable for the doctors alone to bear responsibility for providing " free " professional services. Consequently there is a definite tendency for cities and counties to make direct payments to physicians and dentists for patients served as public beneficiaries. The medical staffs of the Federal Government and of state mental hospitals have for some time been paid on a full-time or part-time basis for their services, and a substantial number of full-paid physicians are now employed in state and local government hospitals for persons afflicted with tuberculosis or other contagious diseases. Local government general hospitals also tend toward the use of full-time medical staffs, particularly in roentgenology and pathology. House officers and resident physicians and surgeons attend many emergency cases, prepare patients for operations, provide after-care for surgical cases, as well as assume full charge of many cases where the patients are not admitted for " teaching purposes."

A number of cities and counties in the United States maintain, on the staffs of the public health departments, physicians who render either preventive or curative care to special groups, such as school children, tuberculosis " contacts," expectant mothers, or venereal disease cases. These physician and den-

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$1 per day for each patient-day of care rendered to indigent persons. Municipal and county hospitals are entitled to share in these grants and nearly all of the local government hospitals for general, specialized, and tuberculosis cases participate in the benefits of the Duke Endowment grants. *Cf. Duke Endowment Annual Reports, 1925-31.*

tists are employed on an annual or fee basis. Some smaller communities have contracted with groups of private practitioners for the complete medical care of all " public charges." For example, in a city of 8,000 inhabitants in California, a private clinic of 14 physicians is paid annually $10,000 for all services (exclusive of hospitalization) to public charges, including immunization, surgery, and the care of medical cases. In LeMars, Iowa, the county pays $500 annually for the services to county patients by a local private clinic of five practitioners. The amount does not cover the costs of service rendered, but the members of the clinic feel that the $500 represents more than would have been otherwise received, since the doctors, in any event, would have served these same patients without remuneration.

A useful function may be performed by county medical society clinics organized to provide services for certain members of the population, particularly the very poor or persons of moderate means who are unable to pay private fees for the services they require. The physicians serving such clinics might in some instances receive direct remuneration for their services, and the fees paid by patients might be supplemented by tax funds. A county medical society clinic, even without public financial support, would have the merit of enabling the medical profession to render more economically and justly the " no charge " services now being given in private offices. Such a plan would relieve individual physicians of the responsibility for disproportionate numbers of such cases.

In some communities where county hospitals have not been established the care of indigent patients has been achieved through contracts between the municipal taxing authorities and the local county medical society. An illustration may be based upon the arrangements in Davenport, Iowa.

Scott County, of which Davenport is the county seat, contains approximately 100,000 persons and slightly more than 100 physicians. The county tax funds are appropriated annually to the amount of $15,000 for the care of indigent cases. This amount is in addition to payments of $1.75 per day to local hospitals for the care of certified indigent cases.

The care of the ambulatory indigent is conducted at a clinic under the control of the Scott County Medical Society. The clinic is located in an office building and contains several rooms as well as equipment and apparatus for the treatment of ambulatory cases. Approximately twenty members of the county medical society serve on a rotating basis in the treatment of general cases. Clinic sessions are held every afternoon and are served on two separate bases: (1) General practitioners or specialists may serve in the clinic for a remuneration of $2 per clinic session of two hours; (2) Two physicians are paid salaries of $150 per month each for the care of venereal disease cases. These practitioners conduct regular sessions and all venereal cases among the indigent are referred to these men.

In addition to the service at the clinic offices, two physicians are paid monthly retainers of $100 each to make home calls for indigent patients. The clinic and home call service is supervised by a member of the county medical society who receives a salary of $50 per month for this work. The county society has also engaged a full-time registered nurse who serves as office assistant and who supervises emergency care.

Patients are admitted for treatment at the county medical society clinic upon reference from the county overseers of the poor or from the local charitable agencies, the Catholic Charities, the Jewish Welfare Relief, and the Visiting Nurse Association.

The present arrangement has been in effect for several years and will undoubtedly be continued for some time. At present (November, 1932) discussion is in progress which may lead to an increase in the total amount paid to the medical society for their present services.

SALARIED COMMUNITY PHYSICIANS IN RURAL AREAS

In rural areas it is often difficult to obtain adequate medical care for patients and adequate remuneration to physicians. Approximately thirty rural areas in the Canadian province of Saskatchewan, and three in Manitoba, have engaged the full-time services of physicians whose salaries are paid through taxation.* The community physician resides in a town or village located within the area which he serves, and treats resident patients at no charge, either in his office or in their homes according to medical necessity. Usually each practitioner serves from 1,200 to 2,000 persons, and the salaries provide annual net incomes of from $3,000 to $5,000. In some instances residents of the town or village also contribute to the annual salary through tax funds. In other cases the "rural" physician serves these people on a private practice basis.

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* See Publication No. 11, listed at the end of this volume.

Both physicians and patients appear to be satisfied with the arrangement. The agreements for the employment of the salaried physicians differ among the various rural municipalities which they serve. In general, medical services are provided free of charge to patients, but nominal sums may be charged for country calls, medicines, and obstetrical service.

The system assures a stable income to the employed physicians, as well as a higher average income than is received by other country physicians in similar population groups. The practitioner apportions his services according to medical needs, rather than to the patients' whims or abilities to pay. Abuse of the system by patients or doctors has been negligible, according to both municipal officials and physicians. The physician usually acts as health officer, and is responsible for the enforcement of regulations with regard to immunization, isolation, quarantine, and sanitation without jeopardizing the continuance of his regular income.

By this arrangement the community is assured the continuance of a resident physician in the community. No communities have reverted to the plan of private practice after trying the community physician system. The appointments as municipal doctor are in great demand among the practitioners of the province, particularly the younger men. It is predicted by the Health Officer of Saskatchewan that within ten years (by 1941) most of the sparsely settled rural municipalities in the Province of Saskatchewan will be served by salaried physicians.

The tax levy usually applies only to the salary and expenses of the physician and not to the cost of hospitalization. This limitation is a serious one for patients requiring hospital care, for the costs of 50 to 100 hospitalized illnesses may involve as large a total expenditure as all the other illnesses of the 2,000 members of a community.

In Manitoba the provincial medical society has submitted a memorandum to the deputy minister of health suggesting that the remuneration and methods of procedure of the municipal doctor plan be standardized throughout the province. This is a system of "state medicine," with the government collecting the funds for medical care and employing the doctor to serve the public.

The extent to which the "municipal doctor" system might prove applicable to similar rural areas in the United States would depend upon the extent to which the population was willing to tax itself to insure good medical care, upon the opportunities of the physician to earn a reasonable income, and upon the effect which the procedure would have upon the professional status and advancement of the individual practitioners.

The author of the report on the "Municipal Doctor System in Rural Saskatchewan" presented certain conclusions and implications which indicate the advantages and limitations of the plan in Canada. Extracts from the report are quoted below:

The municipal doctor system has provided incomes and working conditions to physicians which assure their presence in communities which otherwise might not have resident physicians. The physicians now practicing as municipal doctors allege that the freedom from "bill collecting" improves their professional services to patients.

The costs of the doctors' services to the entire community are distributed so that no individual patients are heavily burdened, and yet the taxation basis recognizes differences in financial ability to pay. Although well-to-do taxpayers contribute to the medical care of the poor, this burden falls pro rata upon all property holders, rather than upon only those who seek the doctors' services.

Under the municipal doctor system, more extensive immunization of children against communicable diseases and concentration upon preventive measures have operated to reduce medical expenses which families would have to meet under ordinary circumstances. The system enables the doctor so to coordinate his activities that he can care for more patients in a given space of time than in private practice and leaves him free to judge when urgent and serious cases are deserving of more than average attention, regardless of the economic status of the patient or his family. Medical care appears to be regarded by the residents of these rural municipalities as an integral public service to be shared and supported by the entire community, and hence to be included in maintaining the standard of living.

The arrangement by which some municipal physicians may practice medicine on a "fee" basis among residents creates a temptation for them to increase income by private practice, to the possible neglect of "municipality" patients who are entitled to services. Abuse of the privileges through demands on the doctor's time for trifling ailments has been discouraged by public opinion in the municipality. On the other hand, the accessibility of the doctor at his office at no extra cost has encouraged early consultation for diseases or conditions appearing to need medical care. Only occasionally have doctors complained of their patients' attitude toward immunization.

The municipal doctor system does not of itself completely solve the problem of distributing more equably the total costs of medical care in a community. Such distribution could be accomplished only by including in the system provision for complete medical care, including nursing, dentistry, and hospitalization, even if obtained from outside the municipalities. In rural areas in which no physician now resides and where his services are needed, a guaranteed salary might induce a qualified practitioner to engage in professional service. Moreover, his services would be less expensive than the attention of non-resident practitioners.

In the United States, something which in part approximates the "municipal doctor" scheme has appeared sporadically in rural areas where the local government has provided an annual stipend or guarantee to a local physician. The purpose has usually been to persuade a physician to remain in the community when he contemplated leaving, or to persuade a physician to establish a practice where none was available. Such local government subsidy has commonly taken the form of a salary (nominally) for the duties of health officer and of remuneration for care rendered to indigent and semi-indigent poor.

CHAPTER XXXIII

INSURANCE FOR MEDICAL CARE IN EUROPE

A discussion of plans and experiments in medical service in the United States may gain perspective from reference to the experience of European countries. In Europe, as in the United States, the provision of medical service is mainly in the hands of individual practitioners, rather than groups of physicians or professional organizations. For the mass of people the financial arrangements between physicians and patients, however, differ in most European countries from those in the United States, in that the principle of group payment through some form of insurance is largely utilized. In some localities, clinics and hospitals are used to provide medical service in conjunction with group payment by insurance or taxation, but in the main the individual practitioner, rather than group practice, predominates in the provision of medical service abroad.

The provision of hospital care in Europe is much more largely a governmental function than in the United States, except in Holland and Great Britain, but in the last country hospital service under government auspices has been rapidly extended in recent years. In most European countries hospitals are mainly supported through taxes supplemented by payments from sickness insurance societies to which patients belong, but these insurance payments usually meet only a fraction of the total cost of the care rendered. Only a very small proportion of the prosperous members of a community enter tax-supported hospitals as paying patients in the American sense. A limited number of private hospitals or nursing homes exist for such persons. The medical staff of the typical European hospital includes only a small number of physicians, largely on salary, who are not engaged in any private practice inside or outside the hospital. Thus, only a comparatively small proportion of the medical profession has direct contact with hospital service.

So far as payment for medical service is concerned, it can be said that in most European countries the larger part of the population pays for medical service not in fees directly to the practitioners who treat them, but through regular periodic payments into a benefit society or a local " fund." These societies or " funds " are formed of the employees of a given establishment, or of all insured persons of a given locality, or of the members of a fraternal or friendly society who may be scattered throughout the country. These insurance groups are non-profit organizations and are under some government supervision, although not administered by the government. As a rule the membership dues paid by a wage-earner are supplemented by payments made by his employer and in some countries, also by tax fund appropriations. The total sum from all sources is used to pay the expenses of medical services.

The scope of the medical service provided by insurance varies widely in different countries, as will be seen by the review of systems in four countries presented in the following pages which are based upon the recent volumes of Sir Arthur Newsholme,* and others. Complete medical care of all forms is not provided in any insurance scheme. Taxes are always enlisted for the complete or partial support of hospital care and public health work, and sometimes for other forms of medical service. The scope of service provided by insurance ranges from care for tuberculosis only, as in Italy, to the services of a general practitioner as in Great Britain, and to a fairly complete medical and dental service outside hospitals, as in parts of Germany and Austria. In general, in most countries of Europe, every employed person earning less than a specified income is legally required to insure, and a certain scope of medical care must be provided in return for this insurance, while a wider scope may be furnished if the workers and employers who pay the bill voluntarily assess themselves larger amounts for the additional benefits. Cash benefits in partial replacement of the loss of wages during illness are an almost universal accompaniment of these insurance plans. Certain illustrative details are brought out in the following brief accounts of the situation in Great Britain, Germany, Denmark, and France.

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* *Medicine and the State,* Sir Arthur Newsholme (Williams & Wilkins Co., Baltimore, 1932).

GREAT BRITAIN

All wage-earners receiving less than £250 annually are required to insure against sickness, and are furnished benefits covering the services of general medical practitioners and the medicines which they prescribe. The insurance does not cover the services of specialists, hospitalization, or dentistry, which must be purchased by the individual in the traditional fashion; nor is any medical care provided for the wife and family of the insured person.

The cost of the medical insurance for the medical services provided under the National Insurance Act are borne jointly by the employee, the employer, and the national government. Each insured person is privileged to select as his personal physician a doctor who then assumes full charge of the medical care of this individual, provided the services come within the scope of "general medical practice." Each insured doctor is limited in the number of insurance patients assigned to him. He receives his payments through insurance "societies" which serve as clearing houses for the funds collected from the employee, the employer, and the national government.

Every indigent person is legally entitled to free office, home, and hospital treatment. In each parish or union of parishes there is a district medical officer, usually a general practitioner, who receives a fixed salary, rather than payment in direct accordance with the number of patients he treats. Usually the work of the district medical officer does not require his full time and he may combine these duties with private practice or other responsibilities at a government or "public assistance" hospital. The amount of domiciliary medical work has declined rapidly since the National Insurance Act was passed. It has been suggested that destitute persons be allowed to choose their physician in the same manner as insured persons, but the suggestion has not yet received attention.

Indigent persons are admitted free of charge to voluntary "non-profit" hospitals and to public assistance (government) hospitals. Both types of institutions are now available to the general public, and payment is assessed in accordance with the patient's ability to pay, up to stated maximum fees. Hospitalization does not come under the provisions of the National

Insurance Act, but an increasing number of voluntary societies for hospital insurance have recently been formed and provide an important part of the total income of voluntary hospitals.*

GERMANY

The system of insurance in Germany antedates that of any other European country. The first compulsory sickness insurance law, passed in 1883, applied only to certain industries, chiefly mining and railroads, in which voluntary sickness insurance was already well developed. All succeeding legislation has extended the system, both in the number of persons covered and in the range of benefits provided. While only employed persons are required to be insured, sickness insurance organizations have usually voted, as the law permits, to extend benefits to the members of the families of insured persons. Almost two thirds of the entire population are now covered by the sickness insurance plan. As elsewhere in Europe, cash benefits to replace a portion of the loss of wages during sickness are provided for insured persons. Medical benefits include not only service of general practitioners, but also that of specialists, and hospital care. In some localities the interrelationship between sickness insurance and organized public health work is being extended. The entire administrative responsibility for the system rests with the sickness insurance "funds" (Krankenkassen), which are predominately organizations including all insured persons within a given locality, although another important type is illustrated by the industrial funds of employees of a large business establishment or industry. Control of these sickness insurance funds is in the hands of a body of representatives, half of whom are elected by the insured persons and half by the employers. Employers and employees contribute equally to the cost and no contributions to the sickness insurance benefits are made from tax funds. The government provides certain supervisory measures to see that the laws with respect to benefits and financial safeguard are observed.

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* *Cf.* "British Hospital Contributory Schemes," Sydney Lamb, *Nosokomeion,* Volume III, p. 287-296. See also *The British Medical Association's Proposals for a General Medical Service for the Nation* (British Medical Association, London, August, 1930).

Different localities generally show very wide variations in the details of benefits provided and in the manner in which arrangements are made for medical service. A free choice of doctors is usual, but there are instances in which salaried physicians are employed for a certain area. The most common method of remunerating physicians is according to an established fee schedule for services rendered, although a per-capita basis is in use in some places. The services of specialists are frequently provided through clinics rather than by arrangements with individual specialists, although these physicians are in some instances employed on a part- or a full-time basis.

Voluntary sickness insurance has been extending rapidly, especially since the war, among persons who are above the financial limits of the compulsory insurance system. These voluntary systems may be on a national basis or may be organized through commercial groups. Some provide a fairly complete medical service for specified periodic payments. Not infrequently the insured person must make certain additional payments at the beginning of an illness, or must pay a certain percentage of an established fee with the aim of preventing unnecessary calls for service or unnecessary purchase of medicines.

Most German hospitals are supported by tax funds, although many of them are partially or entirely supported through the contributions of insurance funds. Municipalities pay for the hospital treatment of the very poor, and uninsured persons pay according to their means. About 65 per cent of the patients in hospitals are members of insurance societies, but the funds of these societies commonly do not pay more than one-half the cost of each patient. Usually hospital doctors are salaried and do not engage in private practice. The very poor receive care from specially appointed physicians who are reimbursed by the local governments. There are also private hospitals for the well-to-do.

DENMARK

Denmark is considered the only European country which has made a success of a voluntary scheme of sickness insurance. In 1928, about two thirds of the population above 15 years of age were members of state-recognized sickness clubs.

Although membership in these clubs is legally optional, there are many indirect compulsions upon a citizen to join. If through failure to join a sickness club, a person becomes a public charge during a time of illness, he loses his right to vote and if he has received relief from the government during the three preceding years he forfeits his claim to an old-age pension. Non-members must repay governmental relief when able to do so, and may not marry without the consent of governmental authorities. The national government contributes substantially to sickness insurance. The members are compelled to insure against illness through a plan which also includes the employer and the state. It has recently been proposed that old-age pensions be limited to members of sickness insurance societies.

Denmark has a complete system of municipal and county hospitals throughout the country, which charge fees from private patients in accordance with their ability to pay. Insurance societies pay hospital fees for their members but the charges assessed for treatment represent only a fraction of the cost, since the major costs of hospitals are financed by national and local taxation. Insurance societies pay 70 per cent of the total amount paid by patients. All infectious diseases are treated free of charge.

Hospital physicians are usually on a full-time salary basis. District medical officers are employed on a part-time basis to serve the poor and to assume important public health responsibilities in each district.

FRANCE

France has for many years delayed the introduction of any plans for sickness insurance. Recently, however, there has been enacted a law for compulsory insurance against sickness, operable throughout the country. The law applies to employed persons whose annual income does not exceed eighteen thousand francs, and each person must be insured in the geographical " departement " in which he lives. Full medical benefit is to be given and medical fees are payable on an agreed scale according to the amount of service received. Fees for medical attendance are payable directly to the doctors by the insured and each physician can charge an additional sum beyond the agreed scale if he wishes to do so and the patient agrees. The patient is then reimbursed by the insurance fund for a large part of the fee he has paid.*

Municipal hospitals are established throughout France, and treatment in these institutions is free for those unable to pay, provided they are certified by the attending physician or the mayor. For other persons, graduated charges are made. Many of the well-to-do are served in "nursing homes" operated on a proprietary basis by individual practitioners. In all provinces, medical attendance for the poor is organized on the plan of free choice of physician, subject to an official scale of charges which are met by the municipality in accordance with special regulations covering medical relief.

GENERAL OBSERVATIONS CONCERNING EUROPEAN MEDICAL ORGANIZATION

There are many other developments which might be cited in a description of the plans of medical care in various European countries. For example, in Sweden where sickness insurance is voluntary, the municipalities have established a number of "pay clinics" with full-time salaried doctors, and patients' fees are graduated according to ability to pay. In several of the countries the treatment of venereal diseases has been taken over by the government as a community responsibility. It may be desirable to cite the conclusions of two important and comprehensive studies of medical organization in Europe. The first are those of Sir Arthur Newsholme; the second are certain observations regarding health insurance made by Simons and Sinai in their recent study *The Way of Health Insurance.*

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* The method of payment provided by the French scheme is outlined as follows: "The terms of the French system, being practically written by the doctors, deserve mention. This system provides that the physicians, dentists, or other members of the medical profession treating insured patients shall deal with them exactly as with private patients, fixing whatever fee may be arrived at by private understanding. There is an official fee schedule, largely determined by the medical professions in negotiations with the government administrators, but this is not in any way binding upon the practitioners. It is used only as a basis of reimbursement by the society. The practitioner certifies to the performance of a certain medical act; and when the patient presents this certificate to the society, he receives a fixed percentage of the schedule fee as a reimbursement.

"The arrangements for payment are extremely complicated in form, although it is claimed they are comparatively easy of application. The simplest "medical act," a consultation, is taken as a, unit, and all other acts are multiples of that unit. There are wide variations in the percentage of reimbursement by the societies, the most common figure being 80 per cent There are special arrangements for the indigent and for hospital care; but everywhere the principles of absolute free choice, professional secrecy, and freedom from lay control are enforced." *The Way of Health Insurance,* by A. M. Simons and Nathan Sinai (University of Chicago Press, 1932), p. 88-89.

Among the conclusions of Sir Arthur Newsholme are the following:

> "The advance of the science and art of medicine has made it impossible for doctors acting individually to meet a large share of the medical needs of the community. . . . . New developments in medicine call for close cooperation between general medical practitioners and consultants who are specially skilled in one or other department of medical practice. . . . .
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> "At present the efficiency of medical aid is reduced by inadequacy . . . . and by discontinuity. . . . . Inadequacy occurs particularly in cases in which the single doctor should have cooperative aid and discontinuity and resultant partial lack of success frequently arise through imperfect cooperation between hospitals, clinics, public health authorities, and the private doctor, or between any two of these.
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> "Voluntary agencies, especially voluntary hospitals, in the past have furnished a large part of the medical aid given in most countries, beyond what the individual doctor can supply. In every country voluntary effort tends to be superseded by official. . . . .
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> "Official services are maintained by taxation of the entire community or by insurance payments, generally compulsory, by a large part of the community. . . . . The use of public funds for medical aid necessarily carries with it a large measure of control by the elected representatives of taxpayers. . . . .
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> "For a large share of the population the individual cost of sickness is overwhelmingly great. This is so even so far as the best domiciliary medical care is concerned; much more so when hospital treatment is required. Thus the problem of medical care has ceased to be one which can be solved for all by direct family payments at the time when the need for it arises. . . . .
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> "In every national system of insurance for medical attendance in Europe, financial as well as medical aid is given during sickness; and in most countries the insurance is made obligatory on those coming within the income limit to which insurance applies.
>
> "These two facts of compulsion and of the dependence of monetary benefits on medical certification—especially the latter—have given rise to trouble. . . . .
>
> "Suggestions have been made for eliminating the provision of medical aid from sickness insurance. Medical certification of illness would then still continue to be needed when incapacitation for work called for it; and the frequent complaints of over-certification would not be likely to be reduced by adopting this suggestion.
>
> "The problem of certification of sickness is largely one of morale. Educational work among the insured will help them to realize the mutual character of insurance. It will probably also be necessary to give the insured a direct personal interest in keeping his financial sick benefit to a minimum level. Behind and beyond the two lines of action . . . . is the ethical problem.

"Hospital provision in nearly all countries is paid for largely out of charitable funds or from taxation or both; and insurance payments for this purpose only meet a part of the cost of hospital treatment.

"In recent years public health authorities have provided not only much hospital treatment, but also certain specialized services. The most important of these are . . . . pathological and other facilities provided to aid practitioners in the diagnosis of certain diseases and provisions for medical care of motherhood and childhood. In European experience the care of parturient women by trained midwives has been associated with a high standard of safety in childbirth. . . . .

"Treatment not of the character of family practice has rapidly increased. The treatment of infectious diseases and measures for immunization have been largely socialized. In the treatment of tuberculosis and venereal diseases the same phenomenon is seen. In the medical care of maternity and of childhood and youth the same tendencies are seen. If family practice is to survive and recover some of its lost ground a team of doctors on the medical side must be the counterpart of the family on the patient's side.*

During the year 1931 the Committee on Dental Practice of the American Dental Association (aided financially by the American College of Dentists) sponsored a study of sickness insurance in Europe which was conducted by A. M. Simons and Nathan Sinai. As a result of their study which covered the professional and economic problems of sickness insurance, the authors discovered several tendencies and principles which they summarized in their final chapter in *The Way of Health Insurance.* Some of these conclusions are particularly pertinent to the problems before the American medical professions and the general public.

"There is practically no important opposition to the principle of health insurance in any country where it now exists. There is criticism in plenty and constant effort to change details, but no agitation for the repeal of the system as a whole and no suggestion to return to the conditions of pre-insurance days. . . . .

"Every attempt to apply the principles of voluntary insurance on a large scale has proved to be only a longer or shorter bridge on the way to a compulsory system. Every so-called 'voluntary' system is successful in just about the proportion that it contains compulsory features, especially in selling and the collection of premiums. . . . .

"There is practically no opposition in the medical professions of any insurance country to the principle of insurance. In spite of sharp criticisms and violent denunciations of details, the national associations of physicians and dentists, have over and over, formally approved the provision of health care to the lower-income classes through insurance.

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* *Medicine and the State,* by Sir Arthur Newsholme (Williams & Wilkins Co., Baltimore, 1932), p. 288-295.

"Whenever dentistry was not included from the beginning in an insurance scheme, the demand for its extension to dentistry has come from dental associations. No dental association in any insurance country has ever officially condemned the system of insurance.

"There is practically unanimous agreement that the insured receive better medical care than they did before they were insured. The logical, although not necessarily wholly certain, conclusion is that those protected by insurance are better cared for than the corresponding economic class in non-insurance countries.

"There is wide variation in professional incomes under insurance; but they will average at least as high, and probably somewhat higher, than they were in private working-class practice before insurance. There is no loss by bad debts, and there is a much larger sum of money expended for the work of physicians and dentists. . . . .

"In every insurance system there has been a fairly steady increase in the number of persons sick and in the number of days of sickness per capita annually. The increase is most rapid among married women, next among unmarried women, and least among men. These trends are found in practically every insurance system, although they are generally much stronger in systems where the conflict between the societies and the medical professions are sharpest and lay control most exercised. In spite of inevitable inaccuracies and incomparable qualities in vital statistics, the tendency seems sufficiently well established to justify the conclusion that universal free medical service does not reduce the amount of recorded sickness.

". . . . a comparative study of many insurance systems seems to justify the conclusion that the evils of insurance decrease in proportion to the degree that responsibilities, with accompanying powers and duties, are intrusted to the medical professions. . . . . The logical conclusion would seem to be that control and responsibility in any insurance system should be given to the medical professions just as fast as they develop the necessary interest, social knowledge, and leadership to enable them to assume those functions.

"In countries where the medical professions have not prepared for and assumed a position of leadership in the new social and economic phases of health care with corresponding responsibilities and duties, this professional indifference to public social health problems tends to be reflected in corresponding indifference, or even hostility, to the medical professions on the part of the public. One manifestation of this attitude is an increase in patronage of unqualified practitioners and proprietary cures. . . . .

"The more completely the entire system of cash benefits is separated from medical service, the more successful and satisfactory are the workings of any insurance system. Cash benefits in time of sickness, like those for old age, widowhood, unemployment, military service, etc., should be based upon economic conditions or legal definition, in which health is but one factor. Health care and medical service can then be sufficiently differentiated from its necessary economic phases to make professional control possible and efficient.

"When the economic side dominates, as it does in most insurance systems today, the administration tends to become constantly more complicated and expensive. A multitude of records, mostly concerned with checking abuses arising out of the confusion of objectives and consequent internal conflicts, are required. . . . .

". . . . Wherever the administration of insurance is in the hands of societies, they exercise great political influence. This is one of the sources of the apparently irresistible pressure for bigger benefits for more and more of the population. Separate administration of medical service would relieve health insurance of much of this pressure and the accompanying political difficulties, since there is no such clamor for the extension of medical benefits as there is for cash.

"Owing to the definite specific character of dental work, the dentist is subject to less difficulties than the physician under insurance. Questions of malingering, neuroses, and certificates of incapacity do not usually trouble him. There is considerable friction over the character and the cost of the work to be done, and little opportunity for preventive work. He is caught up in almost all of the difficulties concerning remuneration that come from being involved in a system concerning which he had little foreknowledge of its coming and less to say about its provisions.

"Many of the problems of dental care for the low-income classes, and for much of the rest of the population, can at least be partially solved without insurance by an adequate system of care during the school age." *

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* *The Way of Health Insurance*, by A. M. Simons and Nathan Sinai (University of Chicago Press, 1932), p. 204-209.

PART IX
SUMMARY AND CONCLUSIONS

CHAPTER XXXIV

A SUMMARY OF THE FINDINGS

In the large volume of data presented in the preceding chapters certain facts are of basic significance and are especially germane to the conclusions which flow from this study as a whole. The present chapter attempts to focus attention upon the most significant findings which permit of quantitative interpretation; Chapter XXXV, which follows, briefly reviews present-day trends, developments, and experiments in the economic organization of medical service; and Chapter XXXVI presents a crystallization of the authors' main conclusions and an outline of a program for remedial action.

THE NATIONAL BILL FOR MEDICAL CARE

For the year 1929 the total national medical bill (see Table 1) was $3,656,000,000, representing an annual expenditure of $30.08 per person, or about $123 per family. Approximately 2.9 billions of dollars, 79 per cent of the total, was paid by individual patients or their families through the medium of fees or other direct expenditures for medical service. Somewhat more than $509,000,000, or 14 per cent of the total, was met through taxation. Approximately $182,000,000, or 5 per cent, was provided through voluntary contributions and donations, more than one-half of which was destined for new buildings and equipment rather than for the current expenses of providing medical service. The owners of industrial enterprises contribute annually $79,000,000—2 per cent of the total cost of medical care—by the payment of fees to individual medical practitioners or through expenditures to hospitals in which industrial accidents and occupational diseases are treated.

The Composition of the National Medical Bill.—The 79 per cent of the cost of medical care which is paid by individual patients or families is not distributed equally among the entire population. It comes not from the 123 million potential patients in the United States, but from the 60 per cent who receive some medical care; and it comes very unequally from those who in a typical year make expenditures for medical services. It is this uneven incidence of the cost of illness for the individual and his family which is largely responsible for the public criticism of the costs of medical care. Similarly, the receipt of income by medical practitioners and institutions is very uneven and often uncertain and inequable.

Taxation for medical care is seldom singled out for special criticism, except as part of general objection to the magnitude of taxation. Voluntary contributions may be discontinued when the contributor loses interest in a particular project or finds it inconvenient to continue his payments. Owners of industrial enterprises consider provision of medical care necessary in the maintenance of an effective working force. But the patient is never reconciled to the expenditures he must personally make for the compulsory and unpredictable costs of sickness.

It may be useful to recall the types of expenditure which have been the targets for the major criticisms directed against medical costs. The largest single class of expenditures made by patients consists of payments to physicians in private practice—$1,090,000,000, or nearly $9 per capita. About one-half the people of the country consult doctors each year. The payments to physicians are only 36 per cent of the total expenditures made by individuals and families, but the frequency of contact with the medical practitioner has undoubtedly served to identify the medical bill as the doctor's bill in the public mind.

The total annual expenditure for dentistry is $445,000,000, equivalent to $3.66 per person in the United States. Public complaint against the cost of this service will not be understood unless it is realized that only one person in five receives any dental service in a typical year and that the dental patient spends, on the average, $18 per annum. For vast numbers of persons the cost of dentistry appears to be a serious financial burden and far larger numbers find the cost an effective barrier between the need and the purchase of dental care.

Another large item in the patients' bill is that for hospital care, approximating $278,000,000 annually for all who are served in hospitals. Although patients' fees for hospital care are only 42 per cent of the total operating costs of hospitals and are only 25 per cent of the amount paid to private physicians in an average year, the hospital has been a storm center for general criticism of the costs of medical service. The explanation lies in the fact that this fraction of the total hospital bill is for services rendered to a relatively small proportion of the population (about 4 per cent). Approximately 5,000,000 paying patients are admitted to the hospitals in the United States each year and each one incurs an average charge of $55, not including physicians' or nurses' fees.

Although the expenditures for drugs represent two-thirds of a billion dollars annually and exceed the payments to dentists and nurses combined, they have not given rise to widespread public complaint. The public buys its medicine as merchandise rather than as medical service, postponing purchase when money is not readily available for this purpose, and making payments complacently and in small amounts during periods when earnings are not interrupted by sickness or unemployment.

The annual bill for all medical care is but 4 per cent of the estimated national income for the year 1929. It is difficult to believe that this is an undue burden for the people of the United States *as a whole.* Compare the 3.66 billions spent for medical care with the amount (nearly 15 billions) spent for commodities other than food, shelter, or clothing—that is, for entertainment, chewing gum, candy, cosmetics, and similar items. Clearly the resources of the country as a whole are not strained by the necessity of paying for medical care of the quality, kind, and amount now being received, if the reasonableness of the entire national bill is to be judged by the total resources of the people of the United States.

If necessary or desirable, even larger annual expenditures could be made. In addition to the three and two-thirds billion dollars spent annually for the services of medical practitioners and institutions and for medical commodities, there is an additional estimated cost of more than six billion dollars represented by the money value of preventable deaths and by the wage losses due to sickness.

PERSONNEL ENGAGED IN THE PRACTICE OF MEDICINE

In a typical year of modern times, nearly 1,100,000 persons devote part or all of their working time to provide medical care for the people of the United States and earn their livelihood thereby. The total number is about equally divided between those who serve for fees from individuals or families, and those who are engaged by medical institutions such as hospitals, public health agencies, or clinics. There are 550,000 independent practitioners, of whom 121,000 are physicians; 57,000 are dentists; approximately 118,000 are graduate nurses and 150,000 are practical nurses; secondary or sectarian healers, midwives, chiropodists, optometrists, osteopaths, chiropractors, naturopaths or similar groups, and faith healers are approximately 110,000 in number. The institutions of the United States—hospitals, clinics, public health agencies, and drug stores—employ approximately 530,000 physicians, dentists, nurses, pharmacists, social service workers, medical technicians, and lay employees.

Medical care is an esoteric economic commodity concerning which the buyer has no basis for critical judgment of quality or value. The patient does not know whether he should purchase a particular type of medical service and is frequently unable to determine whether or not the medical service has been satisfactory after its receipt. The physician, therefore, is judge both of the patient's need for the service which he has to offer, as well as of the time and conditions under which it shall be purchased. Moreover, inasmuch as medical care involves life or death (or at least the risk of death), the patient frequently believes that only one individual practitioner holds the commodity which he needs. It therefore seems impossible to search for another purveyor of medical service, as he would do if the forces of economic supply and demand operated in medicine as in the majority of business transactions. The conditions surrounding the delivery of medical care are therefore unique and are unlike those which characterize ordinary economic phenomena, because there is but one buyer and one seller and because the commodity itself is of priceless value if received.

Traditionally and inherently medical care is a personal service rendered by a professional person to an ailing or to a potential patient. Economic efficiency cannot change medical care in this respect. The patient is ultimately and inevitably the personal recipient of medical service, and he derives benefit from the medical service in proportion to the degree to which his particular medical needs are met. Just as medical service has been regarded as a personal affair, the payment for medical service has also been considered a personal obligation. Community responsibility has been accepted only in those cases where the nature of the illness involves danger to other persons or requires isolation, or where it entails long periods of treatment which cannot ordinarily be financed by the individual or his family, or where a patient is an avowed indigent and is unable to pay for medical care from his own resources. The personal nature of medical service has been the cornerstone for the evolution of present-day medicine. Each patient has exercised his right to engage a practitioner who suited his real or supposed needs, without regard to the wishes of other members of the community or the profession. Increasingly, however, this scheme of things has developed incongruities. Especially for economic reasons, the advancing perfection of medical science and art have carried medical care out of the reach of millions of families. Their voices raised in protest have made imperative an understanding of the problems and a search for practical solutions. During many centuries the economic structure within which the system of medical service has operated has reflected the views of the times. Society has been changing rapidly in the last few decades; but adjustments between the need for medical care and its effective provision have not kept pace. The newer architecture of society calls for changes in the temple of Æsculapius.

ILLNESS AND THE NEED FOR MEDICAL CARE

Studies of the incidence of illness and the corresponding need for preventive, diagnostic, and therapeutic medical service indicate that in a large population unit, the volume of medical care required is substantially constant in a given period of time. Whereas variations occur among individuals—depending upon age, sex, occupation, or race, season of the year, and geographical location—for the United States as a whole, or for large unselected segments of its population, the frequency of illness and the need for medical care are normally predictable.

The fact that several severe illnesses among the members of one family are offset by apparent health and no recognized need for medical care in another, does not solve the problem of medical costs for the family which must find a way to pay its medical expenses. The economic problems of medical care must be interpreted in terms of the experience of families and of individuals rather than in terms of population groups so large as to conceal all individual differences.

Variations in Frequency of Illness.—The average frequency of illness is slightly less than one per person per year. This does not mean that each individual is sick once every twelve or thirteen months, for nearly one-half of the people surveyed (47.5 per cent) report no illness whatever, and 2 per cent have four or more non-consecutive attacks of illness or of recognized need for medical care. The actual distribution of illness is found to be as follows:

Number of Illnesses During Twelve Consecutive Months	Per Cent of Persons Having the Specified Number of Illnesses (All Causes)
0	47.5
1	32.1
2	13.5
3	4.7
4	1.5
5 and over	0.7

There is also considerable variation with age in the proportions of individuals who are sick during the year. Among children under 5 years of age approximately 68 per cent are ill once or more, and only 32 per cent escape an attack of illness during the year. In the healthy ages from 15 to 19 years, the proportions are almost reversed, for 41 per cent report illness and 59 per cent report no illness during the year. Among persons 65 years of age and over, 60 per cent have one or more illnesses and 40 per cent report no illness during a twelve-month period.

A tabulation of the number of recorded illnesses per 1,000 persons reveals no great differences among persons in families with various incomes; 805 illnesses are recorded for each 1,000 persons in families with from $1,200 to $2,000 income, 880 for those with incomes of $3,000 to $5,000, and 1,111 for those with more than $10,000. There is more *recognized* illness in the higher than in the lower income classes; it is uncertain whether there is really more illness. The difference between the recorded rates for the lowest and highest economic classes is of the order of 1 to 1.4. And this, as we shall see, is of itself entirely insufficient to explain differences in the receipt of care or in the costs.

Considering families of all sizes and all incomes, at one extreme 8 per cent have no illness; but at the other extreme 7 per cent have nine or more illnesses during the year. Of the families with only two persons, 18 per cent experience no illness during the year, 4 per cent have six or more illnesses, and only 0.4 per cent suffer nine or more. Most of these small families may be able to meet their burden of sickness without undue financial inconvenience. Among the unusually large families with eight or more persons each, there are 39 per cent (nearly two-fifths) which have six or more illnesses, and 15 per cent have nine or more illnesses during the twelve-month period. For them the financial burden of sickness and medical care must be enormous.

The percentages quoted above for families of all incomes give a fair picture of the situation in each income level—except that among the very large families with the higher incomes, a larger percentage reports many illnesses. The problem raised by nine or more illnesses in a family with a total income of less than $1,200 is vastly more serious than in the family with an income of $5,000 or more. More than one-fifth of the families with incomes of less than $1,200 have six or more illnesses per year, and 7 per cent of them have nine or more. In the same income group, 17 per cent of the families with eight or more persons have nine or more illnesses during the year. This situation as a whole may be presumed to occur year after year, although each family does not necessarily repeat its sickness experience one year after another. The data merely tell us that every year an appreciable proportion of all families has a very large burden of sickness. For a thousand families the incidence of illness may be predictable; but for the individual family it is uncertain.

Sickness surveys show that certain proportions of the population experience a year of life without illness. Indeed, the age curve for persons without illness is sometimes designated the " age curve of good health." But with records of physical defects and impairments before us, it seems more probable that this age curve is a composite of the " age curve of good health " and the " age curve of neglected disease." Health is a relative term; yet it is probable that very few persons experience a whole year of good health. It seems more likely from the data presented in earlier pages that the need for some medical care each year is practically universal.

The Causes of Illness.—Considering all population classes combined, 844.5 illnesses per year occur among each 1,000 persons. Of these illnesses 434.4, or nearly one-half, compel the patient to remain in bed for one or more days, and 60.1, or 7 per cent of the total, are hospitalized for one full day or more.

Among the illnesses which cause the patient to go to bed, the so-called minor respiratory diseases, contrary to what might be inferred from the designation, constitute a larger proportion among the total bed cases (40.2 per cent) than among all illnesses—disabling and non-disabling—and together with the digestive disturbances (7.0 per cent), and confinements (5.4 per cent), make up more than one-half of all bed cases. Other important illnesses which receive bed care are accidents, measles, tonsil and adenoid operations, and ear and mastoid diseases.

Examination of the important items among hospital cases suggests that hospitalization of illness is determined not so much by the severity of the disease as by the nature of the medical need, particularly with respect to conditions which require surgical operations. The most frequent hospital cases are those which are admitted for tonsil and adenoid operations (25.6 per cent of the total). Together with confinements (15.0 per cent), accidents (11.1 per cent), and appendicitis (7.8 per cent), these constitute nearly 60 per cent of the total number of hospitalized cases. It will be noted that all four of these conditions always or commonly involve surgical operations. Of all hospital cases recorded in the Committee's study, 60 per cent are surgical, even when abortions and normal confinements are not counted as surgical cases. Considering the other frequent diagnostic groups among the hospital cases (see Fig. 14), diseases of the female genital organs, ear and mastoid conditions, and hernia all usually involve surgery.

Although the most frequent causes of morbidity are not necessarily the principal causes of death, many types of illness which do not appear in mortality statistics may—and frequently do—act as contributory causes of death.

Any consideration of the ills which medical care is designed to serve must take into account not only the frequency of illness of various types, but also the severity of each. It is not sufficient that the principal causes of illness are served by physicians, hospitals, and other medical agencies; if medical care is to be wisely and efficiently utilized it must be provided according to the most important, and not merely according to the total or the most frequent, need.

THE MEDICAL CARE RECEIVED

According to the Committee's survey of 9,000 families residing in 18 states, in the course of a year 86 per cent of the families receive the services of a physician, surgeon, or other specialist; 21 per cent have one or more surgical cases; 20 per cent have at least one hospital case; and 17 per cent have some nursing care.* About one-half (51 per cent) of the families have some dental care (including prophylaxis) in the course of a year, and 13 per cent have a case of eye refraction or buy eye-glasses on an old prescription. Nearly every family (97 per cent) buys medicines.

Illness rates are not markedly different among families in different income levels; but the amount of medical care received varies considerably with economic circumstance. Regardless of income level, nearly all the families make some purchase of drugs and medicines each year. The proportion of families which consult a physician shows a consistent rise with income and the proportion of families receiving surgery and hospital care in the highest income group is twice that in the lowest. Most of the nursing for the lower income groups is free service. Private nursing care is more than seven times more frequent in families with incomes of $10,000 than in families with $1,200 or less. Similarly, with respect to dentistry and refractions wide differences appear in the proportion of families of various income levels which receive such services. For example, only 43 per cent of the families with incomes of $1,200 to $2,000 receive some dental care, whereas 80 per cent of the families with annual incomes of $5,000 to $10,000 consult dentists.*

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* A considerable proportion of these receive only free visiting nursing; only 9 per cent of the families have nursing service other than, or in addition to, that provided by free visiting nurses.

When the medical care received by individuals rather than by families is studied, very different ratios are found to exist, since a family is considered as having medical care if any member receives such care. For example, although 86 per cent of all the families have the service of a physician during the year, only about one-half (48 per cent) of the individuals consult physicians. Similarly, whereas about one-half of the families have some dental care, only 21 per cent of the individuals visit the dentist during the course of the year. Only 1 person in 17 (as contrasted with 1 family in 5) has hospital care, and only 1 person in 26 has eye care (as against 13 per cent of the families).

Individuals in well-to-do families receive more than twice as many office consultations and treatments from physicians as do those in families with incomes of $2,000 or less, even when calls at "free clinics" are included in the calculations. An average of 21 per cent of individuals receive some dental care during the year, with ratios of 10 per cent for those in families with incomes under $1,200; 16 per cent in the $1,200 to $2,000 group; 41 per cent in the $5,000 to $10,000 group; and 60 per cent in the class over $10,000.

For all income groups combined, slightly less than one day (0.94) is spent in the hospital per person. The number of hospital days per person is approximately the same in the highest and in the lowest income levels, with fewer hospital days per person in the intermediate classes.

Health and check-up examinations amounted to 65 per 1,000 persons during the year of the study, exclusive of well-baby care which really constitutes a check-up examination for infants. Including well-baby care, there are 82 examinations per 1,000 persons, and the rate per 1,000 increases from 68 among families with $1,200 to $2,000 to 234 among those with $10,000 and more. Immunizations equal 59 per 1,000 persons. The receipt of medical care goes hand in hand with the recognition of its need; but recognition of need is correlated with economic level and is lower for the poor than for the rich.

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* Data for families in communities of 5,000 to 100,000 population are used as examples here.

Is the present amount of illness necessary? Are the medical personnel and facilities of the United States utilized efficiently in the prevention and care of illness? Are the potentialities of medical science and medical art effectively applied to the economic benefit of the individual, of the community, and of the nation?

AN APPRAISAL OF CARE RECEIVED

The medical care actually received by the people measures only the current effective demand in the purchase of medical service. It is, for many reasons, less than the true need. Ignorance, apathy, and cost are chiefly responsible for the fact that effective demand is on a lower level than true need.

To appraise with some precision the adequacy of the medical care which people receive, the data accumulated in the Committee's survey of nearly 9,000 families have been compared with standards formulated in a study of the fundamentals of good medical care. Such comparisons reveal that, taken by and large, neither the rich nor the poor receive medical care in the home, in the physician's office, or in the hospital as often or as extensively as their true needs and the dictates of sound medical procedure warrant. The significance of the economic barrier between the true need and the current receipt of medical care is especially evidenced by the finding that far greater inadequacies obtain for those of small than for those of large means. Just as some people go hungry though the country produces more food than the people can consume; many are inadequately clothed though we manufacture more clothing than we can use; even so millions are sick, hundreds of thousands suffer pain and anguish, and tens of thousands die prematurely for lack of medical care which available personnel and facilities could supply. The tragedy concealed in this conclusion is the more poignant because medical practitioners and institutions are used to only part of their capacity—not because their services are not needed, nor because they are unwilling to serve.

If the people of the United States were to receive medical service in kinds and amounts according to the dictates of adequate medical care, more practitioners and facilities than are now available would be required. Table 71 gives a summary of the present numbers and types of personnel and hospital accommodations, together with estimates of the numbers requisite for the needs of the American people under the present system of medical organization. A program of adequate care calls for more physicians, more dentists and dental assistants, more public health nurses, more private duty nurses, more hospital beds. But until the public is educated to recognize the need for—and the value of—medical care, until the population is more generally able to pay for these services, increasing personnel and facilities would merely increase the present degree of unemployment among physicians, dentists, and nurses and would increase the number of unoccupied hospital beds. Administrative and economic problems must first be solved before the receipt of medical care can be commensurate with the true needs of the people.

TABLE 71

PERSONNEL AND FACILITIES AVAILABLE AND ESTIMATED AS REQUIRED IN THE UNITED STATES IN 1930

Personnel and Facilities	Per 100,000 Population		For United States	
	Number in 1930	Estimated Number Needed	Number in 1930	Estimated Number Needed
Physicians	126	142	144,000	173,848
Dentists	(1928) 56	179(a) 99(b)	68,000	219,444(a) 121,081(b)
Public health and visiting nurses(c)	16	44	18,800	54,032
Home and hospital nurses(d)	99	176	118,000	216,128
Hospital beds:				
General(e)	328(f)	462(g)	452,010(f)	566,833(g)
Mental	350(f)	558(h)	437,919(f)	685,740(h)
Tuberculosis	52(f)	138(h)	65,940(f)	169,427(h)
Total hospital beds	730(f)	1,158	955,869(f)	1,422,000

(a) Calculated on the assumption that dentists work without technical assistants.

(b) Based on the assumption that X-ray and laboratory technicians and dental hygienists perform all but chair work. The total number of these subsidiary persons required would be 109,907.

(c) Including industrial nurses.

(d) Staff nurses in hospitals and sanatoria are included in this count.

(e) Includes in addition to general hospitals, maternity; industrial; convalescent and rest; isolation; children's; eye, ear, nose, and throat; orthopedic; skin and cancer; hospital departments of institutions; and all other hospitals, exclusive of nervous and mental and tuberculosis.

(f) Compiled from the American Medical Association Hospital Register, 1931.

(g) Assuming an occupancy of 300 days a year.

(h) Assuming an occupancy of 340 days a year.

THE UNEVEN BURDEN OF MEDICAL COSTS

If the nation's bill for medical care were equally distributed among the people of this country, the annual charge would be $123 per family. If the direct family expenditures only were equally distributed, each white family of two and more persons would have annual charges of $108. But the costs are not distributed uniformly. The burden of medical costs falls very unevenly in any one year; most families bear expenses of small magnitude, some incur medical obligations which strain their budgets, and others are loaded with costs which spell financial ruin if the family is not aided by the collective resources of the community.

The uneven burden of medical costs may be illustrated by the charges incurred by representative families. About 58 per cent of the families in a general, white, population group have annual charges of less than $60 (see Table 29), and this fraction incurs only 18 per cent of the total medical bill for all families. About 32 per cent of the families have charges of $60 to $250, and the sum of their charges is 41 per cent of the total bill. Only one family in each ten has charges of $250 and more, but the sum of their charges is 41 per cent of the total bill. The unequal distribution of charges occurs among families in each income class; the main difference between the poor and the rich appears in the total size of the bill, but not in the essential unevenness of the load.

If the annual medical charges incurred by families with incomes of $1,200 to $2,000 were distributed equally among all in this income class, each would be charged $67. But this is not what happens. Only 5 per cent of these families have charges of $250 and more, but the sum of their medical bills amounts to almost one-third of the total. Among the families with incomes of $3,000 to $5,000 the average charge is $138; but approximately one-half of the total medical bill is incurred by 86 per cent of the families whose charges are less than $250, and one-half by the 14 per cent whose charges equal $250 and more. Even among families with incomes in excess of $10,000, this disparity between the distribution of the families and the distribution of their total charges is very pronounced. The average charge in this class is $503; about 16 per cent with medical expenses of less than $100 each incur only 1.3 per cent of the total; 51 per cent have charges of $100 to $500, and the sum of their bills amounts to 24 per cent of the total; approximately 33 per cent have charges of $500 and over and the sum of their bills equals more than 74 per cent of all charges in the income class.

The costs of medical care must, in the last analysis, be reflected against the family budget; but it is significant to observe the distribution of charges with respect to individuals rather than families. About 57 per cent of individuals either report no illness or report illness and receive no medical care. About 43 per cent incur no charges for medical care in illness or for preventive service. It is not surprising, therefore, that of the total charges for medical care, only 7 per cent is incurred by the 70 per cent of the persons whose individual charges are nothing or less than $10; 41 per cent of the total is incurred for the 25 per cent whose charges fall between $10 and $100; and 52 per cent is charged for the 5 per cent of the population whose costs are $100 and over per person. The proportions vary greatly, of course, for the diversified income groups which together constitute a general population. In families with incomes of $1,200 to $2,000, 43 per cent of the persons receive no medical care in a typical year, another 5 per cent are cared for entirely free of charge, and 30 per cent incur bills of $10 or less. For persons in families with incomes of $10,000 or more, only 14 per cent receive no medical care, 0.3 per cent receive only free care, and only 12.4 per cent incur bills of less than $10 in the course of the year.

The average costs of medical care to the family are reasonably certain and predictable, just as the average incidence of illness is normally certain and predictable. But the statistical certainty for a large group does not apply to any one member of the group. The incidence of sickness, the amount and kinds of medical care which may become necessary, and consequently the costs for the individual or for the family cannot be anticipated. They may, and ordinarily do, vary greatly among persons and among families.

Medical Bills and Family Budgets.—The expenditures by families for medical care increase with family income, but not proportionately. The average charge per family for nearly

9,000 families studied by the Committee on the Costs of Medical Care ranged from $49 for those with annual incomes of $1,200 or less, and $67 for families with incomes of $1,200 to $2,000, to $249 per year for those with $5,000 to $10,000, and $503 for those with incomes in excess of $10,000 per annum. Among the families with incomes of less than $5,000 it was revealed that the expenditure for medical care was limited by the size of the income and did not increase according to the number of persons in the family. For all the income groups except those with $5,000 and more, there was, in general, less than 10 per cent variation between the average expenditures for families containing only one or two persons and for those having eight or more in the family. For families with $5,000 or more income, however, the average expenditure for medical care ranged from $209 for families in which there were one or two persons, to $474 for those with eight or more. Apparently, when the income is less than $5,000, only a small amount is squeezed from the budget for medical care, and this amount is more or less fixed regardless of the size of the family. These families spend a particular fraction of their budget for medical care; nor do they spend more if the family is large or less if it is small. The only apparent effect of family size is that it determines how many persons the average medical expenditure must cover.

The Composition of the Family Medical Bill.—How does the average family spend its money for medical care? Physicians receive approximately 40 per cent, dentists 18.5 per cent, hospitals 13 per cent, nurses on private duty 8 per cent, secondary practitioners and healing cultists 2 per cent; 13 per cent is spent for medicines, 2.5 per cent for eye-glasses, and about 3 per cent for all other types of medical service.

These proportions, however, do not hold for all income groups. For families with $1,200 to $2,000 income, the physician receives 44 per cent of the average family expenditure for medical care, whereas the physician's portion is only 35 per cent among families with incomes in excess of $5,000. The proportions decline similarly for expenditures for hospital service, except among those with incomes in excess of $10,000 annually. The opposite tendencies are observed for nursing and for dentistry: the percentage spent for private duty nursing and for dentistry increases both absolutely and proportionately with increasing size of the family income. On a proportionate basis, eye-glasses are of about the same economic importance for each income group. The same holds true with regard to secondary and sectarian practitioners. Medicines consume a decreasing proportion of the total cost of medical services for people in the higher income groups, accounting for 16.5 per cent of the total bill for families with $1,200 to $2,000, and for only 7 per cent of the total bill for families with $10,000 or more.

These proportions should not be interpreted to mean that expenditures for physicians, medicines or hospitalization are lower for families in the upper than in the lower income groups. The average total costs of medical care for families with an annual income of $1,200 or $2,000 are only one-eighth of the expenditures for families with incomes of $10,000 or more. Families with incomes of $1,200 to $2,000 spend $29 and $11, respectively, for physicians' services and for medicines; families with incomes in excess of $10,000 spend annually $175 and $36, respectively, for these items in the bill. The comparative expenditures for nursing and dentistry are striking: families with incomes between $1,200 and $2,000 spend on the average $3 and $9, respectively, for all private duty nursing and for dentistry; families with $10,000 and more spend approximately $70 and $130, respectively, for these same services.

Size of Community and Average Expenditures for Medical Care.—The average annual charge per person varies directly with the size of community, ranging from $16 per capita for those living in towns of less than 5,000 and in rural areas, to $32 per capita for those in cities of 100,000 population and over. These comparisons hold substantially for families at all different levels of income. A series of eight community surveys in the United States showed a range of annual costs from $6.45 per capita in an entirely rural county in Tennessee to $54 per capita for the city of Philadelphia. Between these extremes appeared the following figures: $7.54 for Toombs County, Georgia, and $11.14 for Lee County, Mississippi—both small, essentially rural counties in the South; $21 for Franklin County, Vermont, and for Shelby County, Indiana, both of which are two-thirds rural; and $36 for San Joaquin County, California, which is about 60 per cent urban.

Differences in the average per-capita costs for medical care in various communities result in part from differences in personnel and facilities, in part from the volume of medical services rendered, and in part from the relatively higher unit fees for services rendered in the metropolitan or urban areas in contrast to the small towns and the country districts. The per-capita expenditures follow closely the wealth—and especially the spendable wealth—of the population.

" High-Cost " Illnesses.—The drain of medical charges upon the family purse is of two quite different kinds: the costs of frequent and comparatively inexpensive illnesses or medical needs; the occasional occurrence of the so-called " high-cost " illness. The difference is of fundamental importance to the family. The occasional or even frequent incidence of minor illness and comparatively small costs for medical care may be easily and complacently absorbed in the family budget; but the occurrence of a " high-cost " illness, even when moderate rates are charged for each unit of service, may be a financial catastrophe for the family of small or modest means.

When the costs of medical care are examined with respect to the severity of illness (see Table 25), the two most significant observations are, first, that hospitalized illness * consumes 50 per cent of the total bill, and, second, that this proportion obtains without important variation in all income classes. In the charges for hospitalized illness are included not only the charges for hospital care, but also the charges of physicians and other professional personnel, the cost of drugs and medicines, and any other charges incurred for the case.

Of the remaining half of the total bill, 17.5 per cent goes for non-disabling illness, a scant 4 per cent for disabling illness which does not confine the patient to bed, and 29 per cent for illness which involves resort to bed at home. When these items are examined for the proportions of the bill which they consume in each income class, it is found that non-disabling illness accounts for a larger fraction of the total, and disabling illness for a smaller fraction, in the higher than in the lower income classes. This is not surprising when it is recalled that the principal reason for higher morbidity rates in the upper income levels than in the lower is the reporting of more non-disabling illness, and especially of more cases which involve preventive and prophylactic services. With these minor exceptions, the composition of the total bill is the same in all income classes, despite the fact that the totals increase more than tenfold from the poorest to the wealthiest families.

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* That is, illness which involves hospitalization at any time during its course.

The costs of hospitalized illness constitute such a large fraction of the total medical bill that they deserve special attention. The average total charge, per hospitalized illness, for all income classes combined is $139. Among families with incomes of $1,200 to $2,000, the average cost of a hospitalized illness is $103 as compared with $470, four and one-half times as much, among families with incomes of $10,000 or more. The average total cost for each illness which involves hospitalization exceeds the average charge for all medical care to all families in each income class. This, combined with the fact that the costs of a hospitalized illness are concentrated in point of time, explains the common opinion that hospital costs are too high and beyond the means of the average man.

Some people are accustomed to think that the services of the hospital are largely responsible for the high cost of hospitalized illness, but this is only partly correct. The bill for hospital care (see Table 26) accounts for only 41 per cent of the bill for hospitalized illness in the $1,200 to $2,000 income class, and for even less (32 per cent) in the groups with more than $5,000 annual income. Physicians' fees are responsible for about the same percentage of the total costs of hospitalized illness in all income groups—namely, about 45 per cent. There is a tendency for the wealthier families to spend (absolutely and proportionately) larger amounts for special nursing in the hospital and in the home following hospitalization.

Charges for Preventive Medicine.—Preventive medicine has taken great strides in recent decades, and much is said about the importance of an increasing emphasis upon the prevention rather than the cure of disease. It is therefore disappointing to discover the small proportion of the total costs of medical care that can be charged to preventive medicine: of a total of $30 per capita for all types of medical service, only $1 per capita is spent for official and non-official public health work. In the direct expenditures of families, of a total of $108 per family spent for all types of service, 78.5 per cent represents the costs of the care of illness, 17.4 per cent is spent for dental care, 2.7 per cent for care of the eyes, and only 1.4 per cent for all types of preventive service!

ECONOMIC PROBLEMS OF MEDICAL PRACTITIONERS

The uneven burden of medical costs upon individuals and their families has its counterpart in the uneven distribution of income among the physicians, dentists, and nurses who minister to them. Nor are the economic uncertainties the only difficulties which confront the medical practitioner of today.

In our modern times, personal service is a costly service. The mechanization of domestic tasks which has lessened the drudgery of the housewife has not served to lower the cost of domestic personal service. On the contrary, parallel with increased facilities for lightening the labor of cooks, laundresses, and other domestic servants, the hour value of their services has marched upward. One full-time servant is now a maximum in most families with annual incomes as high as $10,000. In fact, sample budgets for families with incomes of less than $5,000 rarely contain items for domestic service, and in 1930 only 5.5 per cent of the families in the United States employed domestic help. Few indeed are the families of the present day which can afford a full-time physician, a full-time chaplain, a full-time tutor or governess, or even a full-time trained nurse. As a result, the professional services of these highly trained persons are made available on a visiting or hourly basis, or—as in organized medical services, in churches, and in schools—are supplied through group-payment devices which render the incomes of the professional personnel independent of the incomes of individual members of the purchasing group.

The Private Practice of Medicine.—The number of physicians in the United States has increased steadily for many years, reaching 142,000 in 1929, of whom 21,000 were full-time salaried practitioners. The increase, however, has been less rapid than the growth in population, so that the number of physicians decreased relatively from 173 to 126 per 100,000 population between the years 1900 and 1929. There appears to be a growing impression that the number of physicians in the United States exceeds the public's demand for their services, even though general education in health standards has undoubtedly increased the utilization of certain medical services.

Physicians are unevenly distributed throughout the nation, with a wide variation in the ratio of physicians to population from state to state and among various cities and rural areas. At first this concentration seems haphazard. One factor, however, appears to determine the location of medical practitioners; namely the ability to pay for medical care as evidenced by the per-capita wealth or the per-capita income of the people of the community. Wherever a community is financially able to support a physician, there a physician (or more than one) is established.

Approximately 23 per cent of the physicians in the country are complete specialists, and approximately 21 per cent are partial specialists, leaving scarcely more than one-half of the practitioners of the United States to act as general practitioners. When the distribution is considered according to size of community, one finds that 86 per cent of the physicians who practice in towns of 5,000 or less consider themselves general practitioners. In towns with populations of 5,000 to 10,000, this proportion is 65 per cent, and it is only 50 per cent for towns of 10,000 to 50,000 population. In cities with 50,000 or more population, less than 40 per cent of the physicians are in general practice. Specialism is urban—in the field of medicine as in many other activities.

It is estimated that physicians in private practice in 1929 received approximately $1,090,000,000, or nearly one-third of the total amount spent for all types of medical service. This large amount does not mean, however, that the average income of the 121,000 private practitioners was high. The total amount paid to all physicians in private practice represents an average annual expenditure of $9 per capita throughout the country and, if evenly distributed among physicians, would constitute an average gross income of $9,000. This average gross income is not available in its entirety to the physician as earnings, for nearly 40 per cent of the gross receipts of private practitioners is consumed by professional expense. The real or net income of medical practitioners in 1929 was on the average but $5,300, or approximately $100 per week. It is lower in 1932.

The average income conceals important individual differences; professional gross incomes range from less than enough to meet the professional expenses to amounts in excess of $100,000 annually. Length of time in practice is a factor in the earnings of a medical practitioner, but the peak of his earning capacity appears to be reached during the period from 15 to 24 years following the date of graduation. Throughout the United States, the average income of physicians in the industrial states is higher than that of physicians in the rural areas, and in large cities is higher than in small cities and towns.

Specialization is a primary factor in determining professional income. In 1929 the average net income for general practitioners was $3,900; for partial specialists, $6,100; and for complete specialists, $10,000. This does not mean that most practitioners received these average amounts. The median net income for general practitioners was $2,900, ranging from $2,400 for towns with 5,000 or less population to a maximum of $4,500 in cities with 25,000 to 50,000 inhabitants. In cities of a million or more population the net incomes of general practitioners showed a median of only $3,300. Partial specialists and complete specialists fare well in all communities, although they comprise a larger proportion of the medical profession in the larger cities, and include a high percentage of experienced and older physicians.

If appropriately competent general practitioners and specialists were available in adequate numbers and in correct proportion to meet the potential demand for adequate medical care, the total medical bill for physicians' services (assuming the present average gross incomes of general practitioners and specialists) would be approximately $1,300,000,000, or little more than $10 per capita.

The adequacy of physicians' incomes may be judged by assuming an amount below which incomes may be termed inadequate by definition. If $2,500 be adopted as the dividing line, approximately 33 per cent of the private practitioners, or some

40,000 physicians, had inadequate incomes in 1929. In communities with less than 5,000 inhabitants, one-half of the physicians fell into this class. If the standard of adequate incomes is set at $1,500 per annum, the number of physicians in the United States whose incomes in 1929 fell below even this point was about 22,000, or about 18 per cent of the total number of active private practitioners, urban as well as rural. The people who complain against the high costs of medical care, and especially against the charges of physicians, consider only the large income of the economically successful practitioner. They are not ordinarily aware that for every physician who receives more than $10,000 as an annual net income there are two who receive less than $2,500.

The Private Practice of Dentistry.—There are approximately 62,400 dentists in the United States—56,800 in private practice and the remainder employed at full-time salaries. The number of dentists has grown in direct proportion to population in recent years, with a ratio of 56 dentists to 100,000 population in 1928. A relative increase in number of practitioners is shown in most states when data for 1925 and 1928 are compared. The concentration of dentists in certain states and cities is influenced by total population and per-capita wealth, and the distribution of dentists among the communities of the country is in almost direct proportion to economic resources.

The average net income of dentists in the United States for the year 1929 is estimated as $4,791, with a figure of $3,989 representing the median (the middle point) of net incomes for dental practitioners studied. The dentist's net income seems to be a somewhat higher proportion of his gross receipts from patients than does the income of the physician: office and other professional expenses of dentists consume approximately 38 per cent of the total income. The average net income of dentists appears to reach its peak in the thirteenth year after graduation when the mean (average) is $5,800 and the median $4,900.

Incomes of dentists tend to be higher in the larger cities than in smaller towns and rural areas, but in each case the average gross and net incomes of dentists who engage in complete or partly specialized services are greater than the earnings of general practitioners. Specialization is not practiced to so great a degree among dentists as among physicians, and it is estimated that 89 per cent of all dentists are general practitioners, 8 per cent are partial specialists, and 3 per cent are complete specialists. The average net incomes for the year 1929 for these types of practitioners were $4,800, $6,100, and $8,000, respectively.

The Practice of Nursing.—The private practice of nursing in the United States is in a desperate economic situation. There were in 1930 approximately 118,000 trained and registered private duty nurses in the United States, and 150,000 untrained nurses who performed services for fees. These numbers are exclusive of approximately 77,000 graduate nurses and 80,000 student nurses in American hospitals. The supply of graduate nurses has increased rapidly, so that the number of nurses per 100,000 population has increased from 16 to 240 between the years 1900 and 1929. These nurses are not distributed evenly throughout the country, however, for rural areas and small towns have few graduate nurses, and in urban areas the field of nursing is overcrowded.

Data for 1929 and later years indicate that most private duty nurses are employed only intermittently, with average annual incomes of less than $1,300. Unemployment is being increased by the graduation of approximately 25,000 students annually from the 2,000 hospitals which conduct nurses' training schools.*

The present situation is unsatisfactory alike to nurses, patients, and hospitals. The graduate nurse finds private duty nursing an overcrowded field, in which she can look forward to no professional advancement or substantial increase of professional income. The patient objects to the high fees for nursing care ($5 to $8 per day) which, although they do not exceed the rates for skilled artisans, are nevertheless a substantial burden to the patient who requires the service. The hospitals with training schools have avoided certain operating expenditures through the use of student nurses rather than registered graduate nurses, but they do not assume responsibility for finding positions for their alumnae, most of whom must seek employment in the field of private duty nursing.

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* Of this number only 1,663 are fully accredited by the State Boards of Nurse Examiners.

The net cost to the public in the support of an excess of registered nurses probably exceeds the savings to the hospitals (and hence to the public) through the conduct of nurses' training schools.

Nurses serving hospitals and public health agencies on a full-time basis appear to have larger professional opportunities than those in private practice, but at present not more than 77,000 nurses are employed in hospitals and 18,800 in public health work including industrial nursing. Some increase in demand for special nursing services has developed through the establishment of "group nursing" in hospitals and part-time service on a visit or hourly basis in homes. But to date these trends have not required the employment of a large number of graduate nurses.

The untrained "practical" nurse is, in many states, allowed to do nursing for hire without supervision or licensure. This has led to a state of affairs which confuses the public in its search for medical care, and often obstructs the provision of good service.

Subordinate and Competing Personnel.—The advance of medicine has not only developed specialization among physicians, but has been accompanied by the growth of other groups who perform special or subsidiary functions. The midwife, a practitioner in a vocation of ancient origin, has in the United States rarely had systematic training, although midwives still deliver nearly 15 per cent of the births which occur in the country. In some states, public health authorities have made substantial progress in training these women or supervising their work. The optometrist and chiropodist are mainly independent practitioners dealing with certain special forms of medical care. The development of proper relationships between these groups and physicians presents a yet unsolved problem to the medical profession and the public. The medical social worker, the physiotherapist, the occupational therapist, the laboratory technician, the dietitian, represent groups of personnel which participate in medical service almost entirely within hospitals and clinics and rarely practice as independent practitioners.

Of a different order are those other groups of practitioners who claim to treat a considerable and sometimes unlimited variety of human ailments—the osteopaths, the chiropractors, the naturopaths, and the religious and other sectarian healers. As brought out in the Committee's special report on these subjects, summarized in Chapter XVI of this volume, these practitioners meet a demand currently made by some people and occasionally made by many people. The cruder forms of quackery and the entrance of insufficiently trained personnel into any field of healing practice can be partially controlled by law, but only educational measures can create a more informed demand on the part of the public for scientific medical care, and more effective handling on the part of the medical professions themselves of those diseases or conditions from which most sectarian and subordinate practitioners derive their support.

ECONOMIC PROBLEMS OF MEDICAL INSTITUTIONS

Hospitals.—There appears at the present time to be a sufficient total bed capacity in hospitals for acute medical and surgical cases, although these beds are not evenly distributed among states and communities according to population and medical need. General hospitals have been occupied to approximately 65 per cent of capacity during the past five years, in contrast with the 95 per cent occupancy of hospitals for nervous and mental diseases and 90 per cent for the tuberculosis institutions. During the past three years little new construction has occurred among non-government hospitals, although tax-supported institutions have been expanding continuously because of the demand for services to non-paying patients.

The present demand for " free service " in both government and private non-profit hospitals has emphasized the need for more adequate and more stable revenue. Of the $656,000,000 spent annually for operating costs, approximately $302,000,000 is paid by patients through the medium of fees, $54,000,000 represents contributions and endowments, and about $300,000,000 is derived from taxation. Most of the $302,000,000 is paid by 5,000,000 " pay " patients admitted to non-government institutions for acute medical and surgical conditions. Most of the $300,000,000 spent by governments is used to support hospitals for nervous and mental and tuberculosis cases, or the treatment of " indigent " patients requiring general medical or surgical care. Voluntary contributions have greatly declined in recent years. Endowment income, which reached its maximum with $20,000,000 in 1929, shows little prospect of growth in the near future.

The general public, through taxation and voluntary contributions, has provided more than 90 per cent of the $3,000,000,000 now invested in the 7,000 hospitals of the United States with their 900,000 bed capacity. Consequently the financing of hospital care, and the adequate utilization of existing and future plant and equipment, are problems facing every American community. In some places, the problem is one of providing new facilities, but more often the task is to finance the hospital service which the needs of the people require and the existing equipment makes possible.

More than 4,000 of the existing hospitals contain clinical laboratories for the diagnosis of disease and 4,400 have X-ray apparatus for photography and treatment. Over 2,000 of the institutions maintain more or less elaborate out-patient departments for the care of patients who do not require bed care. In 2,000 of the institutions dental chairs are established, and 2,000 hospitals conduct nurses' training schools.

Within the hospitals there are maintained continuously 346,000 employees, of whom 14,000 are physicians serving in the capacities of medical directors, resident physicians, or interns; 77,000 are graduate registered nurses employed in administrative, teaching, or supervisory capacities, or general staff nurses giving bedside care and serving in operating rooms and other special departments; 80,000 are student nurses assisting in the care of patients and engaged in training for the independent practice of their profession; 6,000 are social service workers and dietitians; and 169,000 are employees engaged in administrative work, office procedures, and skilled or unskilled manual labor. The distribution of the personnel among various institutions varies greatly with the nature and quality of the services offered, as well as with the particular types of patients admitted for treatment.

The 5,000 hospitals for acute—as distinguished from chronic—cases, with an average capacity of 80 patients each, contain about 400,000 beds and represent a capital investment of approximately $5,000 per bed. The patient-turnover in these hospitals is rapid, and such hospitals receive 97 per cent of the total of 8,000,000 admissions each year. Most of these hospitals and about three-fourths of their bed capacity are under non-government control.

The comparatively small hospitals for the care of patients afflicted with acute diseases are to be sharply contrasted with large institutions for persons with chronic conditions, such as nervous and mental derangement or tuberculosis, which require long-term hospitalization. Although the latter institutions have a total capacity of 500,000 beds, they admit annually only 3 per cent of the total 8,000,000 hospital admissions for illnesses of all types. Most patients in these hospitals are treated for long periods of time. Nearly all the bed capacity of institutions for the care of chronic illness are under government auspices; 95 per cent of the total beds for nervous and mental patients and 75 per cent of those for tuberculous patients are in hospitals under federal, state, county, or municipal control.

The Growth of Clinics.—The care of ambulatory patients has from time immemorial been provided in the home or in the physician's office, but concentration of equipment and personnel in hospitals and the advantages of coordinated professional services have led to the treatment of large numbers of patients—particularly those who are indigent or very poor—in hospital out-patient departments or in organized clinics. It was estimated that in the year 1931 there were 2,042 out-patient departments in American hospitals, and 4,535 public clinics not attached to hospitals. These institutions (private group clinics and industrial clinics are not included in this count) received between thirty-five and fifty million patient-visits during 1931. Out-patient departments and clinics are for the most part located in metropolitan areas. They are served by physicians who work on a part-time basis with a limited salary or no direct remuneration. Of the total number of clinics, more than 1,500 offer dental care.

Public Health Work and the Private Purchase of Preventive Medicine.—Public health services are primarily governmental. The unit of organization is the local health department of a city or a county, since state or federal health agencies in the main serve in a supervisory capacity. National and local voluntary health associations also render important service in promoting new activities and in supplementing government agencies. At least 42,000 persons are engaged in public health work in the United States.

The expanding powers of medicine to prevent disease have been inadequately utilized. The protection of water, milk, and food supplies, the control of infectious diseases, the application of educational and preventive measures for the benefit of children, expectant mothers, and other groups depend upon the existence of organized public health services. These agencies, however, are lacking in most rural areas and in many small towns of the country. Only about one-fifth of the counties of the United States have organized public health departments. The average expenditure for public health work is about $1 per capita, whereas $2.50 per capita is regarded as necessary for effective preventive work. It has been adequately demonstrated not only that public health work prevents many cases of illness and death, but also that expenditures for this purpose result in direct financial savings which may be worth many times the outlay. Considering the enormous value of our vital resources and the inroads which morbidity makes, the investment of an inadequate sum to conserve the public health indicates not only extraordinary ignorance of social opportunity but even poor business sense.

The deficiencies in existing preventive services may be illustrated by the findings in a special study made for the White House Conference on Child Health and Protection. Only 51 per cent of city children and 37 per cent of rural children have had one or more health examinations prior to their sixth birthday; only 13 per cent of children in both urban and rural districts have received a dental "health" examination by their sixth year; 21 per cent of city children and but 7 per cent of rural children have been vaccinated by the time they are six; and only 21 per cent of urban and 18 per cent of rural children have been immunized against diphtheria.

There appear to be comparatively few persons, though the number is growing, who will pay fees to physicians for annual health examinations, for inoculation against diphtheria, for prophylactic dentistry for children, or for other preventive services. The efforts to induce people to undergo periodic health examinations or to obtain preventive dental care have had very meager results. Most persons postpone paying for health until they face the threat of losing it. Ignorance and inertia when combined with economic deterrents form almost insuperable obstacles. Although it is now the fashion to predict or urge that the golden opportunity of the private general practitioner lies in the practice of preventive medicine, it does not appear that the opportunity can be realized as long as a fee-for-service arrangement exists between the physician and his patient. Certainly a vast program of public education would be required to convince people of the value of preventive care before they could be induced to purchase at their private cost any substantial amount of preventive service.

The Costs of Medicines.—The American people spend annually about $665,000,000 for drugs and medicines (in addition to the $50,000,000 spent for these commodities by physicians and hospitals). This amount is of the same general magnitude as the total expenditures for the services of physicians or for the maintenance of hospitals, and greatly exceeds the annual expenditures for dentistry, private duty nursing, or public health.

Less than 30 per cent of the drugs and medicines consumed annually represents the amount used on the express order of physicians, and approximately one-half the expenditure for medicines ($360,000,000) is made for commodities which have secret formulae and which are purchased by the patient direct from a retail merchant.

Manufacturers and venders of drugs and medicines are not always restricted in their business relationships with the public to the codes of ethics traditionally followed by physicians in professional practice. As a consequence, their selling methods tend to exaggerate the therapeutic value of their products and to encourage the lay public in attempts to diagnose their own ailments and to practice self-treatment.

Public control of the manufacture and distribution of medicines has been exercised through the statutes of legislative bodies, through the rulings of public administrators, and through such voluntary procedures as the codes of ethics of the medical, dental, and pharmacal professions. The Federal Government has exercised control primarily over the manufacture and sale of medicines as such, and has shown only incidental interest in professional relationships. Much of the regulatory action of state and local governments, on the other hand, has been concerned with the handling of medicines by practitioners and institutions, and has dealt with such problems as the rights and privileges of physicians, pharmacists, nurses, and sectarian healers to compound, dispense, sell, or administer medicines.

The federal and state food and drug laws do not require disclosure of the formulae for medicines, unless they are of such a nature as to be regulated by the laws governing the sale of alcohol, narcotics, or poisons. A manufacturer may make and sell or offer for sale any secret or non-secret medicinal preparation without supervision or control, except as previously stated, provided that he does not fraudulently misrepresent his product by false statement on the label concerning its ingredients or its therapeutic activity.

The expenditures for medicines have not aroused the same complaints as have the costs of physicians' services and of hospitalization. The reason appears to rest in the fact that the expenditures for medicines are more fully predictable as to time and amount, are relatively uniform among individuals and fiscal periods, and are frequently avoidable in part or *in toto*. Moreover, the cost of medicines is seldom large enough to be a serious item in a family budget, although a few diseases (such as diabetes) require large total expenditures. These costs, however, fall rather regularly and can be anticipated and budgeted from year to year.

The sales of medicines have increased without regard to the needs for drugs as dictated by current standards of medical practice. They have also grown with only negative influence upon the professional activities of the pharmacists of the country—a group of 140,000 men trained and authorized to compound the medicines prescribed by licensed practitioners. Pharmacists have come to rely upon their capacities as retail merchants in the 60,000 drug stores of the United States, rather than upon their scientific knowledge and skill in the preparation of medicines. The decreased demand for the services of pharmacists—they use, on the average, but 10 per cent of their time in compounding prescriptions—has come about concurrently with increased educational requirements for entry to the profession. Approximately 2,700 pharmacists are graduated annually, but most of them look forward to careers as managers or proprietors of retail drug stores, rather than to strictly professional activities.

The evolution of the pharmacy into a department store for many commodities has made the services of pharmacists readily available to the physicians and the people of the country, but has not retarded the increasing volume of sales of secret-formula medicines for self-medication. If " patent medicines " were inherently dangerous or immediately destructive of health they would be stamped out in response to public indignation and legislation. The real danger in the enormous annual sales of " patent medicines " lies in the dubious therapeutic value of their use for a particular ailment. Self-medication under competent guidance may be both scientific and economical, but the use of medicines without or contrary to the advice of informed medical opinion may do actual harm or may delay necessary treatment of a different and more useful nature.

It would be of only passing interest to demonstrate that the usual retail prices of drugs and medicines are greatly in excess of their costs of production. It is more important to emphasize the principle that drugs and medicines should be distributed in a manner to yield the greatest medical benefit to sick persons rather than the greatest financial profit to business promoters. Hence the essential problem in the costs of medicines is not so much to reduce prices to levels commensurate with the costs of production and distribution, as to make the sale of medicines subordinate and helpful to—rather than in competition with—the professional ministrations of licensed medical practitioners. The accomplishment of such a result involves a reconsideration of the entire present organization of the medicine industry. If medicines are to be of greatest use to the public, they must be regarded and distributed as professional commodities rather than merely as articles of commerce.

CHAPTER XXXV

RECENT DEVELOPMENTS IN THE ECONOMIC ORGANIZATION OF MEDICAL CARE

The foregoing chapter has summarized the basic findings with respect to the costs of medical care and their effects upon patients, physicians and other practitioners, and agencies. The present chapter reviews briefly the chief plans or experiments which have been undertaken to deal with these economic problems of medical service.

ECONOMIC TRENDS IN INDIVIDUAL PRACTICE

The Shift of Practice from Doctors' and Patients' Homes.— The outstanding recent economic trend in the individual practice of medicine has been the removal of the physician's or dentist's office from his home into a business or professional building. This development is not an occasional local phenomenon; it is widespread. Except in the rural areas, a very small percentage of individual practitioners maintain their offices in their homes. Even in small towns most physicians are located on " Main Street " rather than in a residential section. " Physicians' and dentists' buildings " have in many cases been erected exclusively for professional offices. Specialists in certain fields, notably pediatrics, appear to remain in residential districts; but even in this specialty the physician's office is to be found in or near the neighborhood retail center and may be a considerable distance from his home.

From an economic point of view, the separate office introduces a continuous overhead cost unknown to the practitioner of twenty or thirty years ago. The expenses of office upkeep and maintenance continue without regard to fluctuations in the physician's volume of practice.

Just as office practice has largely moved from the physician's home to a retail business district, so has the care of many bed patients been transferred from the patient's home to the hospital. Both of these trends have opened possibilities for the development of more efficient technical procedures, as well as for the conservation of the time and resources of a busy practitioner. Some physicians have found the new arrangements economically advantageous. Others have regarded them as introducing additional financial burdens to themselves and their patients, as well as tending to reduce the individual practitioner's control over the provision of medical care. Undoubtedly the trend has brought both advantages and limitations.

Joint Utilization of Equipment and Personnel.—In many cities groups of 3 to 20 physicians and dentists have reduced their professional overhead costs through joint utilization of office space, waiting rooms, scientific equipment, and technical and clerical personnel. Each physician maintains individual financial relationships with his patients, and each physician's gross income is dependent upon fees from patients for services rendered either directly or in consultation. Some employ younger practitioners on a salary basis; but the group relationship in no way interferes with the privilege of each physician or dentist to deal individually with his patients in both professional and financial matters. There are no data to indicate the number of practitioners who pool their overhead costs of office practice, but nearly every office building in the urban areas contains one or more such groups. In a few instances, the organization of practitioners may extend to the construction of a special building, usually adjoining a hospital, and to the adoption of the name " clinic " for the group.

These informal types of group practice are advantageous to the participating practitioners, and tend to conserve the time of patients who require the services of two or more physicians. They do not, however, aid the patient who seeks a general practitioner, nor do they provide any sure method of directing patients to the physician most suitable for their treatment. Each doctor conducts his professional activities according to his own standards and—as if he were unassociated with a group—has the same economic incentive to perform as many types of professional service as possible, even though they may be beyond his capacity to do efficient work or may be of a routine nature, equally well performed by someone with less training or experience.

Private Office Practice in Hospitals.—An increasing number of general hospitals in the United States have encouraged and developed the use of hospital personnel and facilities by individual medical practitioners in the care of their private office cases. There are in the United States about 2,000 registered hospitals owned by individual physicians or by groups, a number of teaching hospitals affiliated with university medical schools, as well as several hundred non-profit association institutions which permit the attending staff to use the out-patient departments for some of their private cases. The Duke Endowment, in drawing its model plans for small hospitals, has made it possible for local physicians to maintain their private offices in the main hospital building. Where a town has only four or five physicians, this arrangement obviates the necessity of maintaining a separate out-patient department for non-paying patients, since the private office practice at the hospital embraces the care of indigent as well as of paying patients. An increasing number of hospitals offer the services of the X-ray and pathology laboratories to individual practitioners in the treatment of their patients, charging either the attending physician or the patient treated an appropriate fee.

THE GROWTH OF PRIVATE GROUP PRACTICE

A further stage toward the integration of medical services takes the form of organization now commonly referred to as the private group clinic. The private "clinic" differs from informal groups of medical practitioners in one major respect, namely the pooling of the incomes as well as the expenses of the participating physicians and dentists. The individual practitioners have little or no direct financial relationships with patients. Each patient is the responsibility of the entire group, but when consultations and special diagnostic procedures are not required, one practitioner alone may treat a given case.

A few clinics have been in existence for many years, but most of the groups now in practice were organized after the World War. There are approximately 200 private group clinics in the United States, in which altogether 2,000 to 2,500 physicians and dentists are associated. The majority of the groups are located in the Middle West, and especially in the smaller cities with populations of 10,000 to 50,000. The various private clinics usually include both internists and general surgeons, but a large number avowedly exclude certain specialties such as obstetrics, pediatrics, orthopedics, or psychiatry. A few clinics have been formed exclusively for such specialized services as diagnosis, orthopedics, or industrial surgery.

Managers of private group clinics report that many cases are referred to them by general practitioners for diagnosis, and that the referring physician is in each case provided with a complete report on the nature of the diagnosis and the suggested appropriate treatment. The development of diagnostic service apart from organization for treatment, is of problematic value. However, experience indicates that the formation of diagnostic clinics on a part-time basis or in conjunction with personnel and facilities for treatment may prove a success.

In their practice of medicine, clinic members are usually organized into partnerships, although an increasing number are forming corporations for this purpose. Most clinics do not own or operate hospitals, but depend upon close affiliation with specific institutions already established in the community.

The practitioners of a private group clinic include two classes: those who share in the ownership of the clinic and participate in its profits and those who are employed on a salary basis. The ratios of owners and employed practitioners vary greatly among individual clinics. The business manager is an employee of the clinic, with duties and responsibilities determined by the clinic physicians. In the course of investigation no case was discovered in which the manager participated in determining the amount or kind of medical service (diagnosis or treatment) to be rendered individual patients.

Remuneration of clinic members may be considered as of two kinds: (*a*) designated salaries or drawing accounts; (*b*) shares in the net profits. These two types of remuneration merge in practice, and it is often impossible to distinguish the earnings which a clinic member receives as a professional employee, from those accruing to him as an owner in the enterprise. The history of several defunct clinics shows that frequently the cause of dissolution has been the difficulty of establishing a satisfactory basis for distributing the clinic's net income. Clinic practitioners vary greatly in the attainments which produce large incomes, although the average income for a selected group of clinic practitioners studied in 1929 was considerably higher than for physicians in the United States pursuing similar specialties in cities of similar size.

At least some of the relatively high average net incomes of clinic practitioners appear to result directly from savings effected in the operating expenses of the organization. The average operating costs of private group clinics, including salaries of nurses, lay technicians (for X-ray, laboratory, and physical therapy), and office staff, as well as rent, heat, light, travel, research, and liability insurance, are about 30 per cent of gross income. Many of these expenses would not be incurred by independent practitioners. The ratio of operating costs to gross income from patients' fees would be about 20 to 25 per cent, in comparison with 40 per cent for independent practitioners.

NON-PROFIT ORGANIZATION OF MEDICAL SERVICES

Throughout the experience of each individual practitioner there comes the occasion and the demand for services for which the patients cannot pay, whether in the office, public clinic, or hospital out-patient department. The patient either pays nothing toward the cost of his care, or merely pays an amount sufficient to reimburse the practitioner or agency for supplies used and a proportion of the costs of subsidiary personal services; the practitioner is not paid for his professional services, either by the patient or by the institution. In such circumstances, the physician provides so-called "free care."

Increasingly there has been a tendency in urban, and especially in metropolitan areas, to organize the provision of "free" or "part-pay" medical service, so that the service is provided in an out-patient (clinic or dispensary) division of a hospital by a professional group rather than by an individual. The service in out-patient departments has tended to improve in quality and widen in scope; the population eligible has been increased to include not only the indigent but also the poor and those of modest means; and the charges have been increased to cover more than the costs of medicines and supplies. To deal with this kind of service, the organization of medical agencies under non-profit auspices has developed especially on the so-called "pay clinic" principle.

But organization has gone much further and has dealt with the provision of medical care for self-supporting, paying groups as well. In this field non-profit organizations have been developed for the provision of special services (dental, diagnostic, nursing, hospital, etc.), or for particular combinations, or for more or less complete service. Some of these organized agencies have provided no special arrangements for the payment of medical costs; others have evolved payment plans as integral parts of the organization. Indeed, the non-profit organization of substantially complete service has come into being as much to enable comparatively poor, wage-earning populations to meet the costs of medical care and to provide funds adequate to support local facilities, as to provide service economically. Hence such developments may either be described here as examples of organized provision of medical care or presented later as examples of organized methods of payment. The essential point, at the moment, is appreciation of the fact that the non-profit organization of facilities and agencies runs the gamut from those which embrace limited and special services to those which cover all common branches of medical care.

The " Pay-Clinic " Principle.—Some of the public clinics have gradually increased their admission and treatment fees, and have organized all or a part of their professional services on a part-pay or full-pay basis. The physician's fee is limited, but it is guaranteed by the sponsoring organization. The various clinics have not all been organized on the same principle. Some, like the Cornell Clinic in New York City, have offered all types of medical service to ambulatory patients. The University of Chicago Clinics' staff extends its services to hospitalized as well as to ambulatory cases. Other clinics have limited their services to certain specialties, such as dentistry, neuropsychiatry, or the treatment of venereal diseases or cancer. Still others have specialized in such services as consultation, health examination, or the diagnosis of obscure and difficult disorders. Not all " pay clinics " have been entirely self-supporting from patients' fees. Some have required annual contributions from official or voluntary sources; others have gained from the avoidance of payments for taxes, interest, and depreciation. A few institutions have been more than self-supporting, to the extent that a surplus has been accumulated, practitioners' salaries have been increased, or patients' fees reduced.

Because of the high cost frequently attendant upon the diagnosis of obscure illnesses, some hospitals and public clinics have established " pay clinic " service for consultation or diagnosis. The form of organization has not been the same in all groups. At the Cornell Clinic, for example, the consultation service is merely a part of the general pay clinic, and the attending staff performs its work for the " diagnosis " cases concurrently with that for others admitted for less complex services. In other instances, the hospital staffs are specially organized for the diagnostic service, utilizing the out-patient department at special hours. This procedure is followed at the Mt. Sinai Hospital and at the Vanderbilt Clinic in New York, the Massachusetts General Hospital in Boston, and the Michael Reese Hospital in Chicago. A few diagnostic pay clinics are established in quarters separate from those of the main organizations, and member physicians serve at stated days and hours each week. This arrangement is followed in the Research Hospital Diagnostic Clinic at Kansas City, and in the Pittsburgh Diagnostic Clinic.

The field of dentistry is particularly adapted to the application of the pay clinic principle, because much of dental service is " elective " in point of time and because of the uniformity and interchangeability of the necessary equipment. Accordingly, there have developed a number of self-supporting dental pay clinics in the United States, in which the fees are lower than those ordinarily charged by independent practitioners.

Organized Provision for Complete Medical Care.—Obviously, the organization and operation of clinics which provide special types of medical care offer only limited solutions to the needs of many fractions of the population. It is therefore not surprising that there have developed in one place and in another, under a variety of auspices, and in diverse forms, nonprofit organizations which integrate all ordinary forms of medical service. The most common of these organizations are those developed under industrial auspices for employees (or for employees and their families) in a particular industry or group of industries. Usually these have come about in a manner which may be illustrated as follows: the nature of the occupation (whether manufacturing, mining, lumbering, etc.) has involved the location or growth of a community in a comparatively remote or isolated region; the establishment of some medical agency has been obligatory upon industry, whether to meet the requirements of workmen's compensation, to prevent and to care for industrial accidents or occupational disease, or to satisfy the needs of the employed population and reduce labor turnover; and the expansion of an *industrial* into a *community* medical service has appeared both desirable and economical for employer and for employee. In some places, however, the stimulus has been of another sort; the low economic level of the community has made the provision and maintenance of a hospital difficult or impossible and the support of medical practitioners precarious or uncertain; under the leadership of professional or lay groups—or both—industrial, social, or geographical units in the population have banded together to provide funds through small, fixed, periodic contributions from all who become eligible to receive (rather than merely from those who actually receive) medical care; sufficient funds have thus been provided to build and maintain facilities and to support personnel where otherwise they would not exist.

It is well known that the provision of complete medical care through organized agencies and on a community basis—especially under industrial auspices, whether under the individual or joint sponsorship of employers or employees—has in many places been of poor quality and indifferent value. Indeed, in some areas such organizations have been devices whereby employers have shifted from industry to labor the cost of medical care obligatory under workmen's compensation, and in some places the "welfare" agencies which have been established have further served the purposes of "capital" to bind "labor" to the job. These and other abuses have been not uncommon. Nevertheless, it is still the fact that through the work of community medical services at least 1,000,000 to 1,500,000 wage-earners and their dependents have been receiving medical care.

The care may rarely have been of such high quality as the well-to-do can obtain in large cities; but it has quite generally been of higher quality (and far larger in volume and variety) than similar population groups receive in similar communities where no such organized provisions exist. Furthermore, the study of selected community organizations which operate under industrial auspices demonstrates that complete medical care of good quality and in large volume *can* be supplied economically and at costs which are within the means of all but the indigent poor and those with incomes scarcely above the level of dependency. But, to accomplish these ends there must be:

(*a*) Effective professional and lay leadership, mutual confidence, and joint control;

(*b*) A nucleus of homogeneous population (economic, social, religious, etc.), which is unselected with respect to medical risk and which includes not less than 5,000 and preferably not less than 10,000 persons;

(*c*) Payment through fixed, periodic contributions from all who are eligible to receive medical care.

Among the essential advantages which can accrue to a population served by an organized community agency is the development of preventive—in addition to diagnostic and therapeutic—services.

COORDINATION OF ALL FEES FOR HOSPITALIZED ILLNESS

The costs of hospitalized illnesses have been—and rightly so—the subject of special study by professional practitioners, hospital administrators, and students of medical economics. Special attention has been given to the possibility of reducing the total costs to patients of limited means, without requiring charity. An experiment usually referred to as the middle-rate plan for hospital patients has been instituted in a number of hospitals in the United States.

The middle-rate plan aims to accomplish for the total costs of a hospitalized illness what the pay clinic does for the costs of services by medical or dental practitioners. The objective is achieved not so much by internal administrative efficiencies as by a coordination of all financial relationships with patients on the part of the hospital, physician, and nurse. Physicians' fees are determined by a schedule according to type of medical service, private duty nursing is permitted only when requested by the physician, and patients must utilize medium-priced hospital accommodations, except in cases of medical necessity. The hospital likewise provides special diagnostic services at reduced rates sufficient merely to cover estimated pro-rata costs. The limitation of fees indicates that the middle-rate plan is applicable primarily to persons of moderate means; for patients are admitted only if they can pay the established fees. The best-known example, in operation at the Baker Memorial Unit of the Massachusetts General Hospital in Boston, relies upon hospital endowment and voluntary contributions to cover part of the costs of the hospital services, but not the fees for physicians or nurses. It is expected, however, that the Baker Memorial Hospital will ultimately be entirely self-supporting from fees to patients served. Other hospitals, such as the Mt. Sinai and the Sydenham hospitals in New York City, the Grace Hospital in Detroit, and the Norton Memorial Infirmary in Louisville, have established the middle-rate plan in existing buildings.

The coordination and reduction of total fees does not, of course, do more than touch the problem of payment for medical services. A 10 or 20 per cent reduction in the costs of a hospitalized illness is of no significance to the person who cannot pay even 10 or 20 per cent of the amount charged. The middle-rate plan is for people able to pay limited amounts, and not for recipients of medical charity. It does not remove the unevenness of the financial burden of illness; it does not provide any great help to the patient in his problem of paying for the cost of a hospitalized illness.

CENTRAL ORGANIZATION OF NURSING SERVICE

Many community public health nursing organizations have been developed to provide nursing care on a visit basis to the sick in their homes irrespective of their ability to pay. The major part of this service is rendered to the poor who can pay nothing or to those of limited means. The service given includes all types of nursing care, and the fees charged are adjusted according to the patient's ability to pay, with a maximum rate of $1 to $2 per hour or per visit, which covers the full cost of the service. Such organizations, usually called public health nursing or visiting nurse associations, offer these services on a non-profit basis. Voluntary contributions usually cover the costs of service to those who cannot pay, although occasionally these contributions may be supplemented by public funds.

A number of insurance companies and industrial enterprises have employed trained nurses on annual salaries or have made contracts with already existing public health nursing organizations to provide visiting service to policyholders or employees in their homes during periods of illness. The duties of these nurses are similar to those of other types of public health nurses, and bedside care is included as part of the nurses' activities. The nursing service provided by insurance companies or industrial enterprises is usually supplied without direct charge to the patient or his family.

In some urban areas municipal health departments provide bedside care to a limited extent in addition to the educational and preventive services of the public health nurse. It is estimated that there were 18,800 public health nurses, including industrial nurses, on active duty in the United States in 1931.

"Group nursing" is an arrangement, now adopted by a number of well-known hospitals, by which a special duty nurse is assigned to the care of several patients. The charges for "group nursing" are considerably lower than for the exclusive services of a private duty nurse. Usually a nurse on group duty works during an eight-hour period, rather than on a twelve-hour basis. To the patient the cost of group nursing for a twenty-four-hour period usually ranges from $5 to $8, as compared with $12 to $17.50 for private duty service, over and above the day rates for hospital care. Graduate nurses on group duty for special nursing are usually employed by the hospital on a monthly basis, and the institution receives all fees paid by the patients for group-nursing services.

The advantages of trained nurse-attendants in hospital service have been recognized in several hospitals, particularly in New England, where training for personnel of this type has been instituted. Another important development has been the experimental use of nurse-midwives in several frontier regions of Kentucky where they have served an extremely impoverished population with notable success.

LOCAL COORDINATING HEALTH AGENCIES

The varied and sometimes conflicting demands of medical agencies, particularly hospitals and health organizations which call for public or philanthropic funds, create a problem with which some communities have endeavored to deal by setting up coordinating bodies. These groups have usually been one of two kinds: (*a*) councils of public health agencies formed to avoid duplication of service and to facilitate apportionment of taxes or voluntary contributions; (*b*) councils of hospital representatives, or other health agencies, to develop joint action and efficiency in administrative procedures, such as purchasing, accounting, or admitting patients. The health councils of Philadelphia, Cleveland, and Louisville are illustrations of the first type of coordinating agency; the hospital councils of Cleveland and San Francisco represent the second type.

The services of community fund-raising agencies in the coordination of health and hospital services have often been of large significance. The joint distribution of funds has served as a beneficial influence in the distribution of " free " patients among institutions. Inasmuch as most organized community support of health agencies and hospitals has been limited to operating expenditures, there has been but slight control over capital expenditures or the raising of funds for new plant and equipment. Some " community funds," however, witness those in Washington, D. C., Cleveland, Detroit, and San Francisco, have exercised the right to pass upon and approve public drives for new buildings or the payment of fixed indebtedness.

The medical, dental, and nursing professions have not usually been represented through their professional associations in community control of health services; their membership in coordinating groups has usually been based upon their administrative responsibilities. Tax-supported health agencies and hospitals have not always taken an active part in the work of these councils.

TRENDS IN THE INDIVIDUAL PAYMENT FOR MEDICAL CARE

The uncertainty of the cost of medical care and the lack of relation between the cost and the patient's ability to pay have contributed to an extension of the physician's long-established custom of adjusting charges to the means of the patient, through a device commonly known as the sliding scale. This practice serves, in a measure, to distribute the costs of medical care among different economic groups. There is, however, widespread complaint from patients, practitioners, and hospitals against the sliding scale, and the difficulties and disadvantages which arise in ascertaining the patient's " ability to pay " and in fixing or collecting charges which have been supposedly adjusted to this ability.

The tradition of voluntary contributions to hospitals and medical institutions is also of long standing. In so far as voluntary contributions are adequate in amount and in time of receipt, and are distributed equably among medical practitioners and institutions to defray their respective costs in rendering medical care to non-paying patients, the practice contributes toward a solution of the problem of the uneven financial burden of sickness. But experience indicates that voluntary contributions cannot be relied upon—either as to time, amount, or distribution—to pay medical bills for those unable to meet their own costs.

Installment Payments by Individual Patients.—The national custom of purchasing relatively expensive personal property (such as radios, household furniture, and automobiles) on the installment basis has been extended also to the payment of medical bills, particularly for the more expensive illnesses which require surgery and hospitalization. A large number of proprietary organizations have been established which purport to relieve the patient and the physician of certain financial responsibilities through the use of installment payments for medical bills. Usually the installment arrangements are combined with a program of credit investigation and collections. Many millions of dollars are borrowed and repaid annually through personal loan and savings banks, and through corporations specially organized for the collection of medical bills.

So far as the privilege of payment by installment facilitates payment in full or makes available medical care which otherwise would not be procured, it is of genuine economic value. The amount of the installment obligation may, however, be a sum greater than the patient can or should pay. The installment procedure eases the burden of the larger sickness bills for some people, but cannot help the majority. Moreover, the interest rates usually charged increase considerably the total financial burden upon sick individuals. No installment payment organizations have been organized on a non-profit basis.

For a non-profit organization to succeed, it would be necessary for the sponsoring group to limit fees, that is, to determine the maximum amounts for which individual patients should be permitted to assume financial obligations. This policy has not been suggested or encouraged by promoters of installment schemes.

GROUP PAYMENT FOR MEDICAL CARE (SICKNESS INSURANCE)

The financial burdens of sickness are of two types: (1) the loss of income during the period of unemployment caused by disabling illness, and (2) the costs of medical services entailed. Sickness insurance, as the term is used in the following paragraphs, refers to fixed, periodic payments for the group purchase of medical care, although payments to cover the costs of medical care are sometimes joined with contributions to insure against the loss of income during the period of illness. The Committee's studies have dealt only with medical care. Preceding chapters have reviewed various experiments in the United States, and, very briefly the extensive European systems of applying the principle of insurance to the payment of the costs of sickness, as well as the extent to which taxation is employed as another form of group payment.

In the United States, at the present time, insurance against industrial accidents or certain occupational diseases is compulsory by law in all but four states; the costs must be met by the employer. Such industrial illnesses are paid for in accordance with the statutes of the several states; federal legislation covers civil employees of the United States and the District of Columbia, longshoremen and harbor workers, and private workers in the District of Columbia. The laws vary by reason of differences in state constitutions, industrial development, and the effectiveness with which labor and employee or employer associations have influenced legislation, but there is a fundamental similarity in them all.

The first state laws of approved validity and general application for the compensation of injured workmen were enacted in 1911 by New York and Wisconsin after several years of study. In most states (all but six of the forty-four which now have such laws) the compensation acts are administered by special boards, commissions, or individual commissioners, rather than by the courts. Some laws cover only " hazardous " or " extra hazardous " industries, and nearly all exclude domestic employees, farm laborers, casual employees, and firms employing less than a specified number of persons. To be compensable, injuries must, as a rule, arise from, and in the course of, employment, although in some laws it is only required that the injury be received in the course of the employment, or be sustained in the performance of duty.

Various attempts have been made to introduce compulsory sickness insurance for non-industrial illness in the United States. During the years 1912 to 1920, an active but unsuccessful campaign was carried forward to enact legislation to this end in several states. Nine states gave special study and legislative consideration to the question of general sickness insurance and, in five of the nine, bills to provide compulsory systems were unsuccessfully introduced in the legislatures.

VOLUNTARY SICKNESS INSURANCE UNDER PROPRIETARY AGENCIES

There are in this country several examples of proprietary schemes in which an intermediate agency, such as an insurance company or business corporation, receives a portion of the amounts contributed by the participating group, in addition to the actual costs of administration.

Medical Benefits Under Commercial Accident and Health Insurance Policies.—Accident and health insurance policies are offered by life insurance companies, casualty insurance companies, and fraternal and benefit associations. Although the accident and health policies were originally separate contracts, they are now ordinarily combined, and medical benefits are common to both. These contracts regularly provide certain guaranteed cash benefits to pay the costs of medical care. None of the companies agrees to provide medical services " in kind." The amount of cash benefit depends upon the type of medical care received, with designated maximum amounts regardless of the total expenses incurred by the patient.

The ordinary life insurance policies which have clauses covering permanent and total disability probably protect more persons than are covered by accident and health insurance policies. Two hundred and fifty companies offered this form of protection in 1930, and the amount of benefit paid for total and permanent disability claims was $52,000,000 in that year.

Since 1911, a type of insurance known as " group coverage " has been offered to individuals in large industrial groups which are given protection against non-occupational accidents and sickness at a low rate under a blanket policy. As in other forms of commercial accident and health policies, restrictions are in force with regard to the type of injuries and illnesses covered. Usually persons who buy group health insurance also hold group life insurance policies and hence are eligible to the free nursing service rendered this class of policyholders by certain large life insurance companies. This nursing service is the chief and almost only significant medical benefit rendered " in kind " by commercial insurance carriers.

Private Insurance Associations (Individual Policies).—Numerous private projects by which insurance for medical care could be made a reality to people of moderate means have been planned and attempted. Usually a lay promoter organizes a corporation authorized to contract and accept premiums for medical care to individuals. The corporation relies for its working capital either upon the preliminary premium, upon funds from the sale of capital stock, or upon commercial borrowing. The promoter of the plan, personally or through agents, sells policies or contracts which guarantee to each holder certain types of medical care, in return for regular monthly or quarterly payments, ranging from $1 to $2.50 per month according to the medical services included in the agreement. Professional services to policyholders are usually obtained from individual physicians, who are paid a fixed amount per policyholder, or according to a fee schedule, or on an annual basis.

In many instances the limitations of the service to which policyholders are eligible are so numerous as to make the benefits of doubtful value to the patient. It is the unusual illness which requires insurance, and, according to most private insurance contracts, it is the unusual illness for which extra fees are charged. Fees can be established to cover much broader medical benefits for the same premiums where group practice is instituted, where no intermediary is employed to promote the plan, and where groups of insured members (rather than individuals) are parties to the contract.

Proprietary Organizations for Group Medical Insurance.—In the states on the Pacific Coast proprietary associations have been developed rather extensively for the provision of medical care to groups of employed persons. They are popularly known as " hospital associations." These associations (which in some instances also provide the services for workmen's compensation cases) contract with employers to provide certain types of medical care for all employed persons in exchange for monthly payments which range from $1 to $2.50 per employed person per month. The professional responsibility is usually to the employer, although the payment is made through a payroll deduction to which a majority of the employees have agreed. According to a typical contract, the medical contractor or association guarantees to " render and give necessary care, treatment, medicine, hospital board and room, and professional services for all non-accident injuries and sickness " except as specified. Certain dental services are usually included; but, in general, there are excluded all treatments required for venereal diseases, conditions peculiar to sex, and injuries resulting from unlawful acts.

Proprietary associations for group medical insurance offer the opportunity for a middleman to gain or lose financially from the increase or decrease of the quality and quantity of medical services rendered. Such plans have been built on an unsound foundation and as a result the professional services provided have been inadequate. There is evidence, however, that some of the proprietary associations have actually provided medical care of a quality which the beneficiaries could not have procured on an individual fee basis and have also provided for the participating practitioners larger incomes than would have been received through individual financial arrangements.

NON-PROFIT ORGANIZATION OF GROUP PAYMENT FOR MEDICAL CARE

In non-profit plans the medical practitioners or institutions deal directly with individual patients or with an agency composed of, and legally controlled by, the potential patients rather than by a middleman as in proprietary organizations.

Types of Groups Served.—Many different kinds of groups have utilized the principle of group payment in the provision of medical care for their sick members. The most common group is that constituted by the employees of a single business enterprise. Group-payment plans have long been the custom in providing medical care for employees of lumber camps, coal and metal mines, and railroads, through contracts with one or more private physicians or the establishment of special industrial clinics. In 1930, it was estimated that about 540,000 gainfully employed persons in the mining and lumber industries of 21 states were eligible to more or less complete medical care on a fixed-payment basis. Medical and surgical attention to sick and injured workers is provided by approximately one-third of the Class I steam railroads in the United States.

Estimates of the National Safety Council indicate that of approximately 5,000,000 persons on the payrolls of 3,600 establishments in 1929, approximately one-third were under some form of health supervision. A more recent study of industrial health services by the National Tuberculosis Association indicates that the employees of approximately 500 different factories participate in some form of group payment for medical care for themselves and their dependents, the total number of persons covered being in the neighborhood of 1,000,000.

In establishments where the number of employees is too small for a separate group-payment scheme, employees of similar occupations utilize their unions or benefit associations to arrange for the group purchase of medical care. Usually the composition of the group has been limited to members in the same geographical area.

In metropolitan areas racial units in the population also have at various times provided for the more or less complete medical care of groups. Medical benefits provided through the local or national branches of fraternal orders have been common in the United States for many decades.

Personnel and facilities in some 153 institutions of higher learning in this country have been organized to provide, in greater or lesser degree, medical care for students. This medical care is available in addition to other health services, such as informational hygiene through academic courses, personal advice from physical directors or medical counselors, and first-aid care provided for injuries incurred during required physical exercise or college athletics.

In some areas, voluntary associations with members drawn from the entire community have been formed, with all residents (except those excluded because of special factors related to age, sex, financial status, or physical disabilities) eligible for admission. These associations have been few in number and have grown very slowly.

Bases of Financing.—In some instances, medical care for groups of patients is financed entirely under the auspices of the employer, with all payments made from the company treasury without direct payment by the employees. The Endicott Johnson Corporation, Binghamton, New York, a large manufacturer of shoes and tanned leather maintains a medical service which provides complete medical care for all types of illnesses among its 15,000 workers and their families. At Lead, South Dakota, the Homestake Mining Company has a 26-bed hospital and a staff of five full-time physicians who care for the company's employees and their families in Lead and the immediate vicinity. Many similar organizations exist throughout the United States.

In contrast with the financing of medical care through the company treasury, the largest proportion of the group-payment arrangements are supported primarily through fixed, periodic payments by groups of individuals or employees. In some instances, the employer supplements the employees' regular contributions by various indirect benefits such as providing free use of buildings, paying part or all of the salaries of the medical staff, or procuring medical supplies or plant and equipment for the group at exceedingly low prices.

The essence of a group-payment plan is the contribution of funds by the potential beneficiary, who pays a fixed amount periodically. The contribution may be made at different time intervals: the textile mill employees in Roanoke Rapids pay 25 cents weekly; the members of the Electric Railway Employees Benefit Association in Dallas pay $1 monthly; and subscribers to the plan in Little Rock, Arkansas, pay quarterly contributions of $7.50. The amount of the periodic contribution is influenced by the scope of the medical services offered, by the inclusion or exclusion of family members, and by the prevailing fees for medical service in the respective communities. For example: one general plan included a monthly contribution of $1 for the services of medical practitioners and the use of their office equipment only; in another case $2 monthly covered complete medical and hospital care to the individual (with an additional $2 for each family member); in a third instance a $2 monthly payment included complete medical and hospital care for the employees and for members of their families the care of physicians only; in still another instance $3 per month was charged each employee (whether single or married) for medical and hospital care for himself and his dependents.

Group Payment for the Services of Physicians.—An agreement providing merely for physicians' office care for personnel was in effect until recently between the Federal Reserve Bank of Dallas and a local private group clinic. Upon the payment of $200 per month by the bank to the clinic, the services of a medical practitioner were available to bank officers and employees for examination and for treatment of minor illnesses. A full-time nurse, employed by the bank, gave preliminary aid and advice to employees pending daily visits of a member of the clinic staff who held an office hour in the bank building. A slightly different arrangement for office care by physicians is provided under the auspices of the welfare association of a department store in a western city of 15,000 inhabitants. The members of the association contribute equal amounts monthly (75 cents per person) into a common fund. The fund is used to pay, according to a standard fee schedule, for medical care rendered to members. Each employee is entitled to a maximum allowance of $75 for medical care in any one year.

A group of twenty physicians in a western city of 300,000 inhabitants has an arrangement by which the employees of a large company may consult one of the clinic physicians free of charge during a regular office hour which he conducts at the company's general office. For this service the clinic receives $1 per month from each individual through the mutual benefit association. In addition, the company pays a flat amount each month to supplement the contributions of employees.

Most contracts include definite limitations upon the types of medical service which will be covered in an agreement. It is customary to exclude from the benefits all care for cases of venereal diseases, mental disorders, tuberculosis, certain chronic illnesses, and injuries arising from acts which are in violation of the law. Maternity care is usually excluded.

No plans which attempt to give the patients completely free choice among all local physicians have been continuously in operation. Plans have been proposed which would allow such procedures, but in every instance the groups of consumers have found that the total costs to them were either too uncertain or too large to justify the continuation of the plan. It has always been found necessary to effect a working agreement by which the costs of medical services could be determined with certainty.

Group Payment for Nursing Service.—Only one special association for the provision of nursing service has come to the attention of the Committee on the Costs of Medical Care. This is the Thompson Benefit Association for Nursing Services at Brattleboro, Vermont, which charges yearly premiums at a rate of $2 for single persons, $3 for married couples, and 50 cents for children under 16 years of age. When a member of the Association is ill at home, visiting graduate nurses are provided at one-half the regular charges; graduate private duty nurses at one-third the usual charges (or $14 per week); and attendant nurses at one-half the usual charges (or $11.50 to $15 per week). In addition to the nursing service in the home, special nursing service is provided to the extent of two-thirds of the cost of three days' special nursing after a major operation. One-half of the cost of nursing in cases of pneumonia is also met by the Association. Benefits not to exceed $200 are given for any one case of sickness. The number of members expanded from 5 in 1926 to 821 in February, 1932.

Group Payment for Hospital Care.—Special associations have been formed in various parts of the United States during the past twenty years for group payment of hospital costs. The earliest plans were based upon the issuance of hospital insurance policies to individuals rather than to groups of persons. Consequently, most of them were unsuccessful because of administrative expenses, the high cost of selling policies, and the adverse selection of policyholders, among whom there were large proportions of chronically ill patients. A few such associations have continued to function on a limited scale, among them groups in Brattleboro (Vermont), Rockford (Illinois), and Grinnell (Iowa), each of which includes five or six hundred members.

Much greater success has been achieved when individual hospitals, or several jointly, have issued insurance policies to groups rather than individuals, with payments made regularly by each group of policyholders to cover the costs of future services to any member. Some of the plans have been instituted and controlled directly by individual, non-profit hospitals. Other non-profit hospitals, individually or in groups, have utilized the services of an intermediary business corporation.

The three years' experience of the Baylor Hospital in Dallas, Texas, and the recent developments in the Touro Infirmary, New Orleans, and in the Hahnemann Homeopathic Hospital, Philadelphia, may be cited as illustrations of group insurance policies issued by individual non-profit hospitals.

The contracts of the three institutions are similar in benefits allowed and in their direct contractual relationship between the hospital and the group insured. For example, the Baylor Hospital plan provides 5,000 persons, for an annual fee of $6 per person, a maximum of 21 days of hospital care, with a discount of one-third of the usual charges for hospitalization in excess of this period. The hospital accommodations allowed are semi-private and the benefits include without additional cost the use of operating room, laboratory, and several similar items. An extra charge—at 50 per cent of the regular rates—is made for X-ray services and all maternity care.

The Touro Infirmary has recently contracted to serve about 150 employees of a daily newspaper. For a fee of $10, a patient is entitled to a $5 private room for 30 days, as well as the use of the operating room and all laboratory services and medicines. X-ray and all other special services are provided at a one-third discount for both in-patient and out-patient care. Members of the employees' families are given a one-third discount on all hospital services.

A somewhat different arrangement has been established between the Hahnemann Homepathic Hospital and 500 employees of certain Philadelphia industries. For an annual fee of $12 the employee (but not his family) is entitled to complete hospital care in an $8 private room for 30 days in one year, and is furnished all necessary X-ray and other special services without additional charge. Maternity cases are included in the policy after a specified period of membership.

The detailed experiences of the Baylor Hospital suggest the possibility of similar results for other institutions. The first contract was drawn in the autumn of 1930 between the hospital and 2,000 members of the School Teachers' Association of the City of Dallas. Later, other groups were permitted to join in the scheme, and on March 1, 1932, 36 different contracts were in effect, covering approximately 5,000 individuals. Some groups of employees have required services whose value exceeds the amounts which have been paid in, whereas others have called for benefits which cost less than the amounts paid to the institutions. Recently the rates on two of the larger groups have been raised because of the higher incidence of illness among the members.

Outstanding illustrations of hospitals which use a business corporation for the promotion and administration of group-payment plans are found in Texas. Each insured member pays $9 per year, one-third of which is retained by the proprietary organization for expenses of promotion, selling, and collections. Amounts equal to 50 cents per month per policyholder are paid into a fund to reimburse the hospitals for services rendered. A promoting organization in the city of Dallas pays the entire amount (50 cents per policyholder, monthly) to *one institution,* which then assumes the full responsibility for provision of hospital care according to the terms of the contract. In San Antonio and Houston, the amounts are turned over to a trust fund administered by a committee of the *several participating hospitals.* All the hospitals guarantee the provision of care, and the participating hospitals are paid for services rendered to policyholders according to the rates and the kinds of services stipulated in the contracts. Policies are drawn for groups of employed persons with a minimum number or percentage of the total number of any group of employees required to subscribe to the insurance plan. The memberships range from ten to several hundred employed persons, who may continue their contracts during unemployment by payment of dues one year in advance.

The income of the promoting organizations is limited to a definite proportion of the annual fees, and is neither decreased nor increased by the amounts of service rendered to beneficiaries. This financial arrangement avoids one of the dangers which may develop from allowing lay persons to influence or to decide the amount or type of medical services provided. The contracts are of limited duration, usually for one or two years.

An insured member is admitted to a participating hospital only upon the recommendation of a physician, although emergency aid is provided pending the arrival of an attending physician. Each insured member is given an individual contract, which, except for accidents, becomes operative ten days after the date of application.

In this and in the other plans cited, both non-profit and proprietary, a patient is permitted to engage the services of any practitioner eligible to serve in the respective hospitals. It will be observed that none of these insurance plans for hospital care covers the complete costs of hospitalized illness.

The Hospital Council of Essex County, Newark, New Jersey, has formed a special non-profit corporation for the administration of a group-payment plan in which the member hospitals participate. Similar plans are under discussion by the United Hospital Fund of New York and the Chicago Hospital Association.

Group-Payment Plans for Comprehensive Medical Service.— Several group-payment arrangements have been in operation which permit individuals to purchase comprehensive medical care by a fixed, annual payment. Three illustrations will be cited because of the variation in the administrative arrangements under which they are conducted.

The first may be illustrated by the agreement between several employee associations in Los Angeles County and the Ross-Loos medical group, a private clinic. More than 6,000 Los Angeles families (which, however, do not represent the entire membership of the association) are covered by an annual medical service agreement at a cost of $2 per month per wage-earner member, regardless of the size of his family. Payments are made to the clinic monthly by the officers of the associations, at the established rate per certified member. Association dues are collected by monthly payroll deductions without contributions by the employer toward the costs of the medical services. Complete medical care, including the services of physicians, nurses, hospitals, and outside consultants when necessary, is provided for eligible persons. Not more than three months' hospitalization will be given to any one individual during a twelve-month period. The patient is required to pay for medical supplies and appliances, such as insulin, eye-glasses, and crutches. A small fee is made for house calls to prevent abuse of the privilege. Hospitalization, X-ray services, and prescriptions for family members are not included in the agreement with the clinic.

In Little Rock, Arkansas, the Trinity Hospital and Clinic has recently effected an agreement with groups of employees for complete medical care at the rate of $2 per individual, the benefits to include the services of physicians and a maximum of six weeks' hospitalization. Payments to the hospital may be made through the financial offices of the employer or through voluntary collections by a designated member of the insured group. The clinic also accepts individual and family memberships, which must be paid quarterly in advance. Computed on a monthly basis the fee is $2.50 for an individual and $5 for a married member and his family. A 10 per cent discount is allowed for a year's payment in advance. The service includes physical examinations; free immunization against smallpox, typhoid fever, and diphtheria; medical services, including surgery; and a maximum of six weeks' hospital care a year, including X-ray and laboratory service, for each individual. Eye and dental work are excluded, as are certain medicines and the treatment of diagnosed cases of tuberculosis, mental disturbances, and venereal diseases. An extra charge is made for house calls.

A unique and comprehensive arrangement for medical care has been established at Baton Rouge, Louisiana, where more than 2,000 employees of the local Standard Oil Company refinery some years ago organized the Stanocola Employees Medical and Hospital Association which employs a staff of physicians and provides a clinic building with complete medical and surgical apparatus for the purpose of providing medical care for themselves and their families. A monthly wage deduction of $3 per member guarantees complete medical care for the employee and his family. The medical care includes professional services at the clinic, hospitalization, and house calls for all types of conditions. A maximum of $250 is allowed to defray the costs of hospitalization and of special nursing for any one illness. Maternity cases are not hospitalized at the expense of the association except when the attending physician considers hospitalization necessary for medical reasons. Hospitalization is paid for by the association at the regular rates in two non-profit association hospitals in the city of Baton Rouge. Membership is voluntary and approximately 75 per cent of the white employees are members of the association.

TAXATION FOR MEDICAL CARE

Taxation as a method of group payment may be contrasted with fixed, periodic payments by direct or potential beneficiaries. Self-supporting taxpayers have usually been the contributors of the funds but not the direct recipients of the service provided. The use of tax funds for medical care represents community action to remedy certain undesirable conditions. It usually has been limited to the care of diseases or conditions which endangered the health of the community or interfered unduly with communal organization and to provisions for the care of the indigent.

A large proportion of the general public, however, cannot be classified either as " certified indigents " or as " self-supporting taxpayers," when need for medical care arises. Accordingly, there have developed in the United States various devices by which taxation has supplemented individual resources in the provision of medical care, namely, the admission of full-pay or part-pay patients to the benefits of tax-provided facilities; and the provision of subsidies by governments to private practitioners and institutions rendering care to free or part-pay patients.

" Pay " Patients in Government Hospitals.—Some state, city, and county hospitals have adopted the policy of admitting patients to receive medical care, even though they are not public charges for other physical necessities. Many of the smaller city and county hospitals are the only institutions available to local practitioners. Consequently persons of all economic groups are admitted: those who pay nothing to the hospital or to attending practitioners; those who pay all or part of the hospital bill only; and those who pay both hospital bills and fees to private physicians. The custom of accepting pay patients is prevalent among the small city and county hospitals in California, North Carolina, South Carolina, Iowa, Wisconsin, Michigan, Maryland, and Pennsylvania. It has been less fully developed in the metropolitan urban areas; but for some years "public ward" patients have been permitted to pay part of the cost of hospitalization in the Cincinnati and Buffalo city hospitals, and in the latter, physicians attend private cases in the municipal institution.

The admission of pay patients to government general hospitals may result in several economic benefits. It may enable a person to obtain needed medical care, without being forced to general indigency after the period of illness. It may raise the general quality of medical services to meet the demands of pay patients. It tends to conserve the time of attending practitioners, who may serve both public and private patients with the same facilities and personnel. It increases the utilization of the public's investment in hospitals and professional personnel, and the medical practitioners are recompensed directly for services which they might otherwise be forced to render free of charge.

Local Government Subsidy to Non-Government Hospitals.—The counterpart of the admission of pay patients to government hospitals is public subsidy of voluntary hospitals for services to free or part-pay patients. In communities which contain no government facilities for the care of indigent patients, the communities have avoided the necessity of erecting government hospitals through an arrangement for flat-rate or per-capita payments to existing non-profit institutions. This procedure is particularly widespread in the medium-sized cities in the western parts of the United States, for example in Duluth, Phoenix, and Sioux City. During the past year several municipalities have voted to reimburse local hospitals at agreed rates per day for services to "free" patients, upon approval of the municipal department of welfare. At the present time many of the voluntary hospitals are becoming more and more dependent upon government assistance, and a special subcommittee of the American Hospital Association recommended to the 1932 annual convention in Detroit that municipal subsidies for non-profit hospitals be encouraged as a permanent source of financial support for these institutions.

State Aid for Local Medical Service.—In several states it has been found that the provision of adequate local public health service requires financial assistance from the state. New York has gone further and has authorized the State Department of Health to reimburse any county to the extent of one-half of its expenditures for the construction, establishment, or maintenance " of a county, community or other public hospital, clinic, or dispensary or similar institution " or " any public enterprise or activity for the improvement of the public health," provided the enterprise is approved by the State Department of Health. In actual practice, however, most of the money so far appropriated under this legislation has been for the support of public health activities and relatively little has been given for direct medical and hospital services. Pennsylvania has for a decade appropriated several million dollars annually as a subsidy to county and city hospitals, as well as to private non-profit institutions for services to non-paying patients.

Taxation for Practitioners' Services.—Physicians and dentists have from the earliest times rendered medical services to the poor without expectation or realization of direct payment through fees, taxation, or philanthropy. Of recent years, however, there has appeared a definite tendency for cities and counties to make direct payments to physicians and dentists for patients served as public beneficiaries. The medical staffs of the Federal Government and of state mental-disease hospitals have long been paid on a full-time or part-time basis for their services, and there are now a substantial number of full-paid physicians in state and local government hospitals for persons afflicted with tuberculosis or contagious disease. In the local government general hospitals, also, there is a trend toward the use of full-time medical staffs, particularly in roentgenology and pathology.

A number of cities and counties in the United States maintain on the staffs of the public health departments physicians whose function it is to render either preventive or therapeutic care to special groups, such as school children, tuberculosis "contacts," expectant mothers, or venereal disease cases.

In a city of 8,000 inhabitants in California, a private clinic of 14 physicians is paid annually $10,000 for all services to public charges, including immunization, surgery, and the care of medical cases. The services do not include hospitalization. In a town in Iowa, the county pays $500 annually for the service to county patients by a local private clinic of five practitioners. Some local medical societies in municipalities in the Middle West have received annual grants for services rendered by members to indigent patients. The officers of the societies attempt to apportion the "free work" equably among the members of the society, and the income is either distributed on some agreed basis or is used to finance the expenses of the society.

Salaried Community Physicians in Rural Areas.—It is often difficult to obtain adequate medical care for patients or to provide adequate remuneration for physicians in rural areas. Approximately 30 rural municipalities in the Canadian province of Saskatchewan and 3 in Manitoba, have engaged the full-time services of physicians whose salaries are paid through taxation. The community physician resides in a town or village located within the area which he serves, and treats patients without direct charge, either in his office or in their homes, according to medical necessity. Usually each practitioner serves from 1,200 to 2,000 persons, and the salaries provide annual net incomes of $3,000 to $5,000. In some instances residents of the town or village also contribute to the annual salary through tax funds; in other cases the "rural" physician serves these people on a private practice basis. Both physicians and patients appear to be satisfied with the arrangement. The agreements for the employment of the salaried physicians differ among the various rural municipalities which they serve. In general, medical services are provided free of charge to patients, but nominal sums may be charged for country calls, medicines, and obstetrical service.

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The foregoing descriptions of recent developments in the economic organization of medical care indicate a wide variety of trends and experiments. They are not all of equal scope and significance, and each involves advantages and limitations from the points of view both of the medical agencies concerned and the public served. The plans have been summarized in the preceding chapter without attempt to appraise their professional and economic aspects. These phases receive attention in the following chapter which presents certain broad conclusions which flow from the basic facts and from these analyses of recent developments in organization.

CHAPTER XXXVI

GENERAL CONCLUSIONS

It will be recalled that the inquiries summarized in this volume were designed to provide a diagnosis of the ills in the present economic organization of medicine. Ample evidences testify to the accomplishments and the failures of the functional arrangements within which medical care is now provided for the people of the United States. To review all or even many of the virtues were too large a task, not pertinent to the immediate purpose. The dictates of need as well as of convenience require that here consideration be given only to the maladjustments which have been discovered and that in the proposals for structural or functional change we hold fast to the good in the old.

If details are disregarded, four major groups of problems emerge from the inquiry. These revolve around:

1. *The effective and economical provision of medical care for the sick.*
2. *The payment for medical care.*
3. *The application of existing knowledge to the prevention of sickness.*
4. *The interrelation or coordination of medical agencies.*

The training of professional personnel is also involved, especially in the first and third groups. But, since the problems of medical education have just been under review by an authoritative national commission which has just rendered its report,* and since dental education and nursing education have also been studied recently by appropriate and competent agencies, the Committee has not specifically directed its inquiries into this field. The subject of professional education therefore receives attention only incidentally.

THE PROVISION OF MEDICAL CARE

Most physicians and dentists are independent practitioners, licensed by the state, and dealing directly with their individual patients or families. The individual responsibility of the practitioner, defined by law and made more effective by the codes

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* The Commission of Medical Education, organized by the Association of American Medical Colleges.

of the professions themselves, must be retained, for this responsibility is essential and inherent in good professional service. Fifty years of amazing advances in the science and art of medicine have compelled division of labor in the study of disease and in the practice of medicine, even as similar progress has operated in other fields of activity. Not only have many specialties developed within medicine itself, but numerous related professions and technical groups have now become necessary in medical service. The capital investment required for the diagnosis, treatment, and study of disease has greatly increased. Approximately one-half of all physicians now practice as individual specialists. Any patient may go to them; many do. The patient himself makes the primary diagnosis that his ailment falls within the province of the specialist of his choice. This is one of the important elements contributing to the complexity and the magnitude of the cost of medical care. Perhaps of even greater significance is the fact that increasing specialization has tended to relegate the general practitioner or family physician to a secondary place.

The independent general practitioner, working by himself, is often unable to afford the costly and varied equipment necessary for diagnosis and treatment of all illnesses; ordinarily he has neither the time nor the special skill to become proficient in the use of such equipment. Moreover, no one practitioner can acquire all the knowledge and technique which render certain individuals peculiarly suited for special phases of medical practice. The well-qualified general practitioner can care satisfactorily for a large proportion of all illnesses, but he needs association with specialists and with hospital facilities in order that he may remain conversant with the newer knowledge of the times and that he may make the most adequate use of available facilities in the care of his patients. A system of many specialists, each working independently, involves economic wastes and professional inadequacies. Mechanized service and a viewpoint narrowly focussed upon an anatomical fraction of the body or a particular group of diseases are among the dangers of uncoordinated specialization. In fact, the services of uncoordinated specialists may be not only more expensive but may even be less satisfactory than the services of a general practitioner working entirely alone.

For ultimate effectivenesss, specialization requires organization—the organization of general practitioners and specialists into groups or agencies designed to reap the benefits of close professional relationships and of the joint use of equipment and assistant personnel. Group practice, more or less developed, is already found in the staffs of all well-organized hospitals and clinics. It appears to some extent among many physicians and dentists who arrange to use offices or certain professional facilities in common, and private clinics have been specifically organized on the group practice principle. In a considerable proportion of the private group clinics, service has been developed chiefly in the specialties, for the clinics have been established primarily for cases referred from general practitioners and other physicians. In a measure, the staffs of most hospitals and clinics have also been built up of specialists. Indeed one of the deficiencies of our present hospital and clinic system is the lack of sufficient relation between the active staffs of the institutions and the body of general practitioners in the locality. Both in private group clinics and in community hospitals and out-patient departments, however, there exist a considerable and a growing number of instances in which general practitioners are active participating members of the group, and in which general medical service is rendered.

The Committee's studies have described examples of group practice which demonstrate that certain notable advantages can be realized. Modern medical practice requires hospital facilities and costly scientific equipment. It is obviously more economical to provide such equipment to a group of physicians or dentists who practice cooperatively than to the same number of practitioners who work independently. Competent management, of both the business and the professional aspects of practice, and adequate organization and direction of subsidiary personnel can be assured more readily to a group.

Association with a group can stimulate improvement in professional practice through the provision of adequate equipment and of sufficient time for study and postgraduate work; through the mutual criticisms of colleagues; and, for younger men, through knowledge that advancement depends upon the sober judgment of professional seniors rather than upon the reputation established among the relatively uninformed laity.

Through the stimulus of daily cooperation, group practice tends to break down the separate habits of thought and action which beset the specialist, and also to create a form of organization which assigns a place, but no more than its due place, to each specialty. Group practice can contribute largely toward a proper relationship between one specialist and another and between specialists and general practitioners.

The form in which group practice is organized is important. No organization can rise above the level of the men and women who participate in it, but it may fall below. Group practice does not counteract all the deficiencies of individual practice, and, if there are faults in organization and limitations of the personnel, it may introduce defects which are not so common in individual practice. In a large group, the average patient and also the physician members who do not occupy important positions may be treated as cogs in a machine. Independent practice provides a stimulus which is necessary and beneficial to some practitioners and which may be lost to them through practice in a group. The desires of older men to keep their grip upon power and the ambitions of younger men to attain it, may have a more destructive effect within an organization than among independent competitors. But extensive experience indicates that able and conscientious physicians can develop a higher average level of service through group than through independent work.

It is sometimes contended that group practice sounds the death knell for the personal relation between physician and patient. If this were so, it were sufficient of itself to condemn group practice. Many who advance this allegation sometimes overlook the fact that the particular developments in medical science and in medical art which have made group practice imperative have themselves restricted the field of usefulness of the traditional personal relation. There are branches of surgery and of narrower medical specialties in which the personal relation is neither essential nor even especially advantageous to either physician or patient. Furthermore, it is common knowledge that in some of these sectors of medical practice it does not remain for group practice to destroy personal relations. This has already been effected by other circumstances, especially in the relations between the patient of modest means and the busy urban specialist. Experience testifies that practicing groups which have placed value upon the retention of the personal relationship have successfully designed their administrative schemes so that the desirable and necessary personal relation between doctor and patient has been maintained.*

Group practice in one form or another seems essential if the mode in which medical service is rendered is to be consonant with the demands of modern medical science and technology. Accordingly, the first major conclusion to be drawn from this study is:

Medical service should be more largely furnished by groups of physicians and related practitioners, so organized as to maintain high standards of care and to retain the personal relations between patients and physician.

THE PAYMENT FOR MEDICAL CARE

The Committee on the Costs of Medical Care and cooperating agencies have made extensive studies of the incidence of sickness and the expenditures for medical care among many thousands of families, residing in many parts of the country and of all economic groups. No conclusion has emerged more frequently or consistently from these studies than that the costs of medical care are felt as a burden more because they are so unevenly distributed among the people than because of their actual amount. The uncertain and uneven incidence of sickness is part of its very nature. The uneven incidence of sickness entails an uncertain need for medical care. And this in turn entails an uncertain financial load. This sequence of uncertainty prevents the individual family from budgeting the costs of sickness in advance to a degree that is practicable in connection with almost all other items of family expenditure. Many families of moderate income who are unable to pay for their medical care in time of sickness are frequently criticized for the fact that they spend relatively large amounts for articles which may be considered luxuries; but families of the same income who deny themselves such luxuries find it just as difficult to plan ahead for the costs of illness. The amount of money which these families can save is usually inadequate for any unexpected and expensive medical needs.

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* A subcommittee of the Committee on the Costs of Medical Care (Dr. N. B. Van Etten, Chairman), has defined "personal relationship" as follows: "The personal relationship between physician and patient is that relationship which includes not only the privileged confidential communications of patient to physician which are recognized as inviolate by law, but also the relationship involved in the communication of his medical history to any physician chosen by the patient, and the continuing mutual responsibility between patient and physician. This in no way inhibits the patient from giving his confidence to different physicians or to the medical integrator of a group of physicians.

"The business relation between physician and patient is not considered to be a necessary part of the personal relationship as above defined nor does the definition carry a commitment for or against any scheme or organization of medicine."

Expensive illnesses may fall unexpectedly on small purses. The Committee's studies show that medical charges of $100 to $200 a year fall upon about one in nine families with incomes of $1,200 to $2,000 and that charges of $200 or over fall upon about one family in every sixteen. Families with incomes of $2,000 or less constitute one-half of the population. To budget against a possible but uncertain expenditure which exceeds 10 per cent and may amount to 25 per cent or an even larger fraction of a small annual income is neither humanly likely nor financially practicable in most instances.

Recognition that sickness falls unevenly and that individuals cannot predict its onset nor easily budget its costs in advance compels the conclusion that the costs of medical care should be distributed over groups of people and over periods of time, rather than permitted to descend upon individuals or families at the time when sickness occurs. This principle of distributing the costs of medical care is already applied in limited measure, partly through taxation, partly through insurance. The prevalent "sliding scale" of professional and hospital charges, whereby the physician or the hospital administration adjusts these costs more or less to the financial resources of the patient, is also, in a measure, a means of distributing costs.

The adjustment of charges by the family physician to the means of the patients with whose circumstances he is closely acquainted has long been an expression of intimate medical relationship. The recent tendency of the sliding scale to expand into a general system of fixing charges for medical care has taken place in a time when many physicians, particularly specialists, and most hospital officers, have no intimate current knowledge of the means of their patients and must undertake the difficult and often invidious task of a special inquiry into their ability to pay. While the sliding scale is an attempt to distribute costs, the method is a source of widespread complaint from all concerned. It is essential to devise methods which will be more satisfactory to patients, physicians, and hospitals.

The principle of distributing costs may require a special geographical application for areas in many states which are too poor or too sparsely settled to provide adequate service entirely out of local resources.

Methods of Distributing Costs.—The two major methods of distributing the costs of medical care, previously referred to, are (1) insurance, (2) taxation.

Both of these methods are in use at the present time, but not extensively enough to prevent medical costs from being burdensome to a great majority of our people. Both of these methods can be and are utilized to meet the costs of certain forms of medical care, or to meet the costs of care for certain groups of persons. Further application of both principles may be accomplished by increasing the scope of the medical services supported or by enlarging the population group covered; or by a combination of these two procedures.

Mutual and commercial insurance companies have become highly developed in the United States. Individual " health and accident " policies are purchasable by individuals from well-established companies, but at rates too high to be within the reach of many wage-earners or other persons of small means. Insurance is, however, within the means of persons with small incomes when purchased by organized groups, such as the employees of a business—and some 2,000,000 persons now have such protection procured for the most part through commercial insurance companies. This " group sickness insurance," as it is usually called, provides a cash benefit which partially replaces the loss of wages during sickness, but does not include provision for medical care.

Participation of commercial companies in sickness insurance has two inherent disadvantages: under their administration the costs of medical care are apt to be increased and the quality of care may decline. When patients and practitioners deal with a representative of an impersonal, intermediary business agency, they have little incentive to prevent malingering, to reduce costs, or to render care of high quality, for all financial responsibility is shifted to the insurance company. When, however, homogeneous groups of insured persons contribute to a common fund jointly administered to meet the costs of medical care, the group as a whole benefits from measures which promote efficiency, economy, and high quality of service. Medical and dental practitioners also find it advantageous to deal directly with patients or their elected representatives, rather than with a commercial intermediary. Group sickness insurance when subject to group supervision and cooperation and safeguarded by community legislation seems to offer advantages as a means of providing protection against the costs of illness.

Wage Loss and Cash Benefit.—Extensive experience in this country and abroad has shown that the wage-earning population takes a more active interest in financial protection against the loss of income due to sickness than in procuring medical care. It is obvious that complete loss of income because of the illness of the wage-earner immediately threatens the whole family with destitution if there are no savings, and that the need for protection against this calamity is keenly felt. All foreign systems of sickness insurance which have been developed on a large scale have met this widespread demand by including provision not only for medical care, but also a cash benefit to reimburse the insured person for a share of the wage lost during sickness. The provision of cash benefits has been a primary element in these systems.

The studies of the Committee's collaborating agencies have made clear that serious difficulties arise when the administration of cash benefits is united with the provision of medical care. The amount of cash benefit to be paid in any case necessarily depends upon medical certification of the existence and the degree of disability. It is to the interest of the insured *group* as a whole to keep cash benefits down, whereas the insured *individual* may naturally wish a generous payment in his particular case. Physicians who are placed in the position of endeavoring to serve these divergent interests find it difficult to do so and also to fulfill their primary professional responsibility for adequate diagnosis and treatment of the patient. Here has been a major source of controversy, ineffectiveness, and sometimes of increased costs in several foreign systems of sickness insurance. The demand for income protection during sickness, however, must be met for large numbers of wage-earners, and the problem of medical certification is inherent and must be dealt with. Its difficulties cannot be abolished, but must be minimized.

Taxation.—Tax funds are already extensively utilized as a means of distributing the costs of some forms of medical service for all people and complete medical care for certain groups of the population. At the present time nearly all hospital care for persons afflicted with mental disease, most hospital care of those suffering with tuberculosis, and all the work of health departments are financed by local, state, or federal governments in this country. The same is true of the medical care of military and naval personnel, of inmates of prisons, and of other wards of the state, and is quite usually the case with the general medical care of persons unable to pay its full cost. These are existing and accepted forms of "State medicine," that is, of the provision of medical care by government.

Stated in another way, the present major expenditure of taxes for medical care is for hospital service. The capital investment in government hospitals was estimated in 1928 at over $1,400,000,000; the operating costs of 1930 as about $304,000,000. This was about 46 per cent of the total operating costs of all hospitals in the United States, as estimated for that year. Of the 304 millions of dollars, $185,000,000 was spent for hospital care of patients with mental diseases or tuberculosis, and the remainder, or $119,000,000 for patients with acute illnesses. Much more than one-half of the provision of general hospital service is made by cities and counties for the maintenance of local hospitals. A few states provide some general hospital service directly and some furnish subsidy to local institutions. Such general hospital service as is furnished by the Federal Government is for special groups only—veterans, soldiers, sailors, and inmates of institutions.

There is no substantial difference of opinion that it is appropriate and proper to use tax funds for the organized prevention of disease or for the care of diseases which, because of their communicable nature, such as tuberculosis, or of their frequency and long duration, such as mental disease, can be adequately paid for in no other way than by spreading the cost over the community. As existing public policy shows, the use of tax funds is particularly important with reference to hospital care, most types of which are relatively so expensive as to be beyond the means of large numbers of persons who pay for other medical service.

Taxation as a means of meeting the cost of medical care is also peculiarly applicable when there is wide divergence in the financial resources of different localities. Medical needs arise, roughly speaking, in proportion to the size of the population, whereas the ability to pay for medical care is in proportion to financial resources. In many of our states there are areas wherein the population because of inadequate resources does not and cannot meet the cost of sufficient medical care. Occasional "demonstrations" by private foundations have aided such areas to establish or improve hospital or health services, but only tax funds, usually from the state, are a sufficiently large and stable source of support to supplement the local resources and to enable their residents to obtain the basic necessities of medical care and health protection. If the provision of medical care is to be extended to accord more nearly with the people's need than is now the practice, and if the costs are to be met, a broader use of tax funds seems inevitable.

The principle of distributing the costs of medical care through one form or another of group payment should be so applied as to cover the full costs of the services received by the major economic and geographical groups and should provide, so far as possible, that persons shall contribute within their means for the services which they receive. Thus, the second major conclusion to be derived is as follows:

The costs of medical care should be distributed over groups of people and over periods of time.

THE APPLICATION OF PREVENTIVE MEDICINE

As a people, we of the United States spend $30 per capita each year for medical care; but of this sum only $1 is spent for the organized prevention of illness. If only those methods of preventing disease which have been thoroughly tested by demonstrable results were fully applied, about $2.50 per capita would be necessary. Even then the ratio between money spent for prevention and that expended for cure would be only one to twelve or thirteen. Some of the existing deficiencies in public health services and the limited sums of money spent for it have already been described in the volume.

Of the sums expended by the family in the direct purchase of medical care, a very inadequate fraction—1.4 per cent—is spent for preventive medicine. To expand preventive measures requires public education, as well as methods of paying for preventive work which shall furnish economic incentives to its extension. There appear to be comparatively few persons, though the number is slowly growing, who will pay fees to physicians for annual health examinations, or for inoculation against diphtheria, or for prophylactic dentistry for children, or for other preventive services. As has been remarked before, most persons postpone paying for health until they face the threat of losing it. An unusual degree of imagination and courage seems needed for an individual to make expenditures for preventive measures, the benefits of which will be felt only in the future, when a dozen immediate demands press daily upon every dollar he possesses. Efforts to induce people to undergo periodic health examinations, or to obtain preventive dental care have had very meager results. Ignorance and inertia, as well as real economic deterrents, are almost insuperable obstacles. Nor can individual physicians and dentists properly press these services upon their patients.

Group payment on an annual basis may largely remove the economic deterrents to preventive work and may supply both the organized group and the individual with an incentive to keep the annual payment to a minimum by spending as much money for prevention as can be shown to yield adequate results. Group payment, furthermore, would make it easier to compensate physicians and dentists adequately for preventive service rendered to their patients, whereas under the current fee system, preventive work such as conscientious professional men give, is often rendered without compensation and sometimes even against their own economic interest.

Hence, the third basic conclusion is:

Methods of preventing disease should be more extensively and more effectively applied, as measures both of service and of economy; and should be so financed as to minimize the economic deterrents to their extension.

COORDINATION OF MEDICAL AGENCIES

In all but very small communities the complexity of present-day medical service is often baffling to the public and also to the agents and practitioners of medical services themselves. The number and variety of specialists, and the uneven geographical distribution of practitioners have been presented in studies by the Committee and by other agencies. Our hospital system has developed from the initiative of local groups and of religious, racial, industrial, and fraternal agencies and interests; and has brought about the investment of more than three billion dollars without expectation of financial return. Even when each individual hospital in a locality is efficiently administered, wastes and inefficiencies may and often do exist in the hospital system of the community as a whole. These are largely due to the failure to coordinate institutions, and to the lack of any planned development whereby the amount of investment and the location and distribution of hospitals are determined in view of known present and estimated future needs.

Obviously there should be an agency in each community, and in states or larger geographical divisions with similar problems and interests, whereby the lay and the professional groups concerned in providing and financing medical services shall be able to consult, plan, and act in behalf of the best provision of medical resources which the community can maintain. To a limited extent and as yet in only a few communities, local bodies such as health and hospital councils have studied these questions and acted in an advisory capacity concerning some of them. These councils mark a beginning in meeting this need. Sometimes the physicians and other professional groups especially concerned have not been as adequately represented in these councils as they should be, and sometimes those concerned with the financial aspect have been unrepresented or have paid too little attention to the needs of planning and coordination.

To a certain extent the county or city health department is the representative of the public in dealing with problems of medical coordination within its area. But no health officer or board of health can deal wisely with the broad questions which arise in connection with medical care, without the cooperation of a community organization. Whether the health department should take leadership in forming or directing an organization dealing with the broad problems of medical care must be determined by local conditions, but the participation of the department in some degree is essential.

The need of coordinating medical facilities and agencies is perhaps most obvious in the sparsely settled rural areas. Only as their small financial resources can be supplemented by those of more prosperous sections, only as their limited professional personnel can be stimulated or increased by linkage with physicians and hospitals of other communities, can these sections acquire or retain the needed physicians, dentists, hospitals, and public health officials. Policies must be worked out whereby these sections shall be assisted through advice, funds, or both, to furnish a necessary minimum of service to their inhabitants. This geographical coordination and regional planning may be assisted by the local groups just referred to, but it is primarily the responsibility of a larger area, usually the state.

Coordination is equally needed in every metropolis. Here some of the problems are also regional. Every city contains poor or inconveniently located sections where location and poverty combine to render medical services inadequate or inaccessible. In the large city as a whole, however, facilities and personnel abound. The problem is to break down the institutionalism of agencies and the sectionalism of groups which waste effort and money and leave some areas unprovided and others with overlapping and duplicated services. The major problem in the large city is the coordination of the *functions* of different agencies. Functional more than geographical coordination is required.

A benevolent dictator could achieve coordination by the strong hand, but that will not be the method in the United States. Coordinating agencies must be educative and persuasive rather than authoritative. They are less significant in their official functioning than in their by-products. When public officials, or members of boards of trustees, or professional staffs think in terms of their institutions rather than of the community, a direct attack will rarely promote broader vision.

The major strategy of coordination operates through systematic conferences nourished by a steady supply of facts. To collect and assemble the facts about facilities and needs furnishes a sound basis for joint thinking and ultimate cooperative action. Coordinating agencies will flourish more by shedding light than by coercion.

One of the frequently encountered obstacles which coordinating agencies meet in their attempts to enlist support or to obtain continued interest is the result of the inherent vagueness of their program as compared with the concrete services of a hospital or health organization. For this reason many influential men and women devote their energies exclusively to particular institutions, and it is often difficult to procure sufficient support to make a coordinating agency effective. Yet as the experience of community chests, of public health associations, and of councils of social agencies has shown in many cities, persistent efforts gradually become effective, and men and women with the needed qualities of leadership are attracted from business, public life, and the professions.

Better mutual understanding and methods of practical cooperation between the professional bodies that furnish service and the lay groups that receive and finance it are the goals of coordination. These results may often arise as the indirect outcome of coordinative effort, but they must usually be planned for their own sake. There are countless examples of the effective participation of medical and lay groups in the hospitals and clinics of this country; of dentists, physicians, and lay groups in many local health programs; and of nurses and lay bodies in the public health nursing associations. There are also examples of systematic cooperation between state or county medical societies and public or semi-public bodies in matters involving professional interests. Any broad plan of coordination will encourage these measures and will particularly emphasize the responsibility of the professional groups which are in a position to give continuous attention to the problems of medical care.

The fourth basic conclusion is:

The facilities and services for medical care should be coordinated by appropriate agencies on a community basis.

IN CONCLUSION

No one can predict the possibilities of preventing and controlling diseases which now take a heavy toll in lives and dollars. The savings actually achieved through scientific research will depend not only upon new discoveries, but upon the degree to which they are applied. It is certainly desirable to encourage and support research, but a balance must be kept between the energy and funds devoted to the acquisition of knowledge and those expended in its application.

In the nation's annual bill of over three and a half billion dollars for the care of sickness, the Committee's studies have discovered much waste. More than a third of a billion dollars is spent annually for worthless or harmful drugs and medicines. At least one hundred and twenty-five millions pay for the services of blatant quacks and charlatans and of unscientific or inefficiently trained practitioners. The " overhead " or difference between the gross and net income of physicians and dentists averages 40 per cent. There is evidence that this can be halved or greatly reduced in well-organized group practice. The consequent saving might be as large as two hundred million dollars a year. There are wastes in the conduct of hospitals due in some measure to administrative deficiencies and in a much larger measure to the low utilization of hospital plants and the consequent waste of capital, increased overhead, and high unit costs. By administrative improvements and, still more, by coordinative measures which would maintain hospitals at a high percentage of occupancy, certainly $100,000,000 could be saved each year.

The total savings in these items would amount to over $750,000,000 annually, or a little more than 20 per cent of the nation's annual sickness bill. To save this amount each year would be an achievement, but savings of this kind can be effected only slowly. Habits of buying drugs and " patent medicines " over the counter are deeply rooted in millions of people and could not be altered suddenly even if the effective advertising and other incentives to the purchase of these articles were discontinued. The same may be said of those who patronize cultists or irregular practitioners. Reducing the high overhead expenses of private practice would be of advantage to physicians and patients alike, but the remedy requires a type of organization which will take time to develop, and which must wait upon the training of experienced personnel to manage efficiently the various aspects of group practice. The wastes in hospital service depend partly on the same factors; the curtailment of the major wastes in our hospital system must be achieved by the gradual scrapping of unnecessary or badly designed plants and the concentration of hospital service within well-located and well-managed institutions which can be maintained without a large percentage of empty beds on each day of the year.

In conclusion, no large reduction in the costs of medical care through eliminating wastes can be achieved by any quick-acting remedy. Yet, in view of the wide-spread lack of needed medical care, all possible elimination of waste should receive immediate attention, in order that the savings may be utilized in supplying this need. Since the nation's bill for medical care is not large in proportion to the size of the national income or to the immense values of preserving and promoting health, attention should be focussed on providing more adequate medical service for more people. To this end, the people of this nation must be prepared—if necessary—to spend more rather than less for the advantages of beneficent science.

APPENDICES

APPENDIX A

SUPPLEMENTARY TABLES

APPENDIX TABLE 1-A

AN ESTIMATE OF THE DISTRIBUTION OF FAMILIES(a) WITH RESPECT TO INCOME AND SIZE OF COMMUNITY, UNITED STATES, 1928–1931

Family Income	Cities of 100,000 and More	Cities of 5,000 to 100,000	Towns With Less Than 5,000 and Rural Areas	All Communities
Under $1,200	2	3	10	15
$1,200– 2,000	8	6	21	35
2,000– 3,000	8	6	10	24
3,000– 5,000	7	5	4	16
5,000–10,000	3	2	2	7
10,000 and over	1.8	0.7	0.5	3
All incomes	29.8	22.7	47.5	100

(a) Families with more than one person.

APPENDIX TABLE 2-A

AN ANALYSIS OF MORBIDITY ACCORDING TO SEVERITY OF ILLNESS

Proportionate Distribution of the Diagnostic Categories in Each Severity Class(a)

Diagnoses	Per Cent of All Cases in the Specified Severity Class						
	Hospital Cases	All Bed Cases	All Disabling Cases	All Illness	Cases of Illness or Medical or Dental Care	Non-Disabling Illness	Non-Disabling Illness and Medical or Dental Care Without Illness
All diagnoses	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Tonsil and adenoid operations	25.6	4.8	4.1	2.5	1.7	0.1	0.1
Confinements, miscarriages, and abortions	15.0	5.4	4.5	2.7	1.8	0.01	0.003
All accidents and accidental injuries	11.1	5.4	7.0	8.5	5.8	11.3	5.0
Appendicitis	7.8	1.7	1.4	1.0	0.7	0.3	0.1
Non-venereal diseases of the female genital organs	3.8	1.4	1.3	1.4	1.0	1.7	0.8
Diseases of the ear and mastoid process	2.0	1.7	1.8	2.2	1.5	2.7	1.2
Minor respiratory conditions	1.9	40.2	38.4	34.1	23.2	29.3	12.8
Hernia and intestinal obstruction	1.9	0.4	0.3	0.3	0.2	0.3	0.1
Diseases of the gall bladder	1.6	0.8	0.7	0.6	0.4	0.5	0.2
Diseases of the kidney, bladder, and annexa	1.5	1.3	1.4	1.5	1.1	1.9	0.8
Pneumonia	1.4	1.6	1.3	0.8	0.5	...	...
Diseases of the heart and arteries	1.1	1.3	1.3	1.3	0.9	1.5	0.7
All diseases of the skin and cellular tissue	1.1	1.2	2.1	4.3	2.9	7.9	3.5
Cancer	1.0	0.2	0.2	0.1	0.1	0.1	0.04
Sinusitis	1.0	0.8	0.8	1.1	0.7	1.5	0.6
Common disturbance of the digestive tract	0.8	7.0	6.8	7.3	5.0	8.5	3.7
Care of the eyes	0.8	0.3	0.8	1.3	4.0	2.1	6.2
Care of the teeth	0.5	0.5	0.6	1.4	20.7	2.6	34.1
Rheumatism	0.4	1.1	1.1	1.2	0.8	1.4	0.6
Measles	0.1	5.0	4.3	2.8	1.9	0.5	0.2
Health and check-up examinations	...	0.01	0.02	1.9	6.3	...	10.8
Immunizations	...	0.4	0.4	0.3	4.4	0.05	7.1
Whooping cough	...	0.8	1.8	2.2	1.5	3.0	1.3
All other	19.5	16.9	17.5	19.2	12.9	22.7	10.0
Total number of cases	2,447	16,772	19,916	32,904	49,526	12,988	29,610

(a) Based upon the experience of 8,758 families surveyed for twelve consecutive months, 1928–1931. (See Publication No. 26.).

APPENDIX TABLE 3-A

FAMILY INCOME AND CARE RECEIVED PER 1,000 PERSONS

Medical Care for Illness and Medical Cases Among 38,668 White Persons in 8,639 Families With Known Income, Surveyed for Twelve Consecutive Months, 1928–1931(a)

Service (or Illness Rate)	Service per 1,000 Persons in Families With Specified Income						
	Under $1,200	$1,200–$2,000	$2,000–$3,000	$3,000–$5,000	$5,000–$10,000	$10,000 and Over	All Incomes(b)
Illnesses(c)	802.5	805.0	828.9	880.4	989.7	1,111.5	844.5
Hospitalized cases (1 day or longer):							
All hospitals	59.4	52.4	59.4	63.1	79.3	98.0	60.1
General hospitals only(d)	55.6	51.2	58.5	62.0	77.8	97.2	58.6
Hospital days:							
All hospitals	1,368.7	863.9	884.0	731.2	896.0	1,270.4	937.7
General hospitals only(d)	927.9	666.7	757.4	604.2	840.3	1,200.8	745.8
Physicians:							
Home, office, and clinic calls on account of illness(e)	1,931.9	2,045.9	2,296.7	2,741.4	3,621.4	4,734.4	2,391.2
All home, office, and clinic calls(f)	2,169.2	2,268.5	2,508.9	2,995.5	3,976.7	5,321.0	2,638.8
Home calls	861.4	847.2	1,037.1	1,308.9	1,330.9	2,359.7	1,048.0
Office calls	821.0	1,110.7	1,286.2	1,524.1	2,489.9	2,918.6	1,326.3
Clinic calls	486.8	310.6	185.6	162.5	155.9	42.7	264.5
Dental cases(g)	115.4	185.7	248.4	347.1	517.1	867.2	259.7
Dental care (persons over 3 years of age)	117.9	184.6	247.5	309.4	446.0	622.0	241.1
Refractions or glasses(h)	24.5	24.6	39.6	53.8	89.6	159.7	41.5
Health examinations(i):							
Excluding well-baby care	53.2	51.8	57.0	71.5	107.0	224.5	65.4
Including well-baby care	83.2	68.0	69.1	82.2	121.7	234.0	81.6
Immunizations(j)	68.5	49.2	50.9	59.6	84.3	120.2	58.7
Secondary and sectarian practitioners(k):							
Home and office calls	154.6	139.1	230.4	231.1	459.0	569.2	213.4

(a) Adjustment for 1,311 persons surveyed for less than 12 months reduces the number to 38,042 on an annual basis. This adjusted number is used in the calculation of rates. See Publication No. 26, listed at the end of this volume.

(b) Data for all incomes are weighted for the several income classes according to the proportions presumed to obtain in the United States. See Appendix Table 1-A.

(c) Where no illness is involved, health examinations, immunizations, and dental and eye cases are excluded. Minor non-disabling illness and well-baby care are also excluded.

(d) Includes all hospitals except tuberculosis sanatoria and mental disease hospitals.

(e) Where no illness is involved, health examinations, immunizations, dental and eye cases are excluded; well-baby care is also excluded. Minor non-disabling illness is included.

(f) Includes all calls for illness, health examinations, immunizations, and well-baby care; excludes all calls for refractions.

(g) Each course of dental care is counted as a single case. Includes dental cases with and without illness.

(h) Includes services from physicians, oculists, optometrists, opticians. Includes all refractions whether or not accompanied by illness.

(i) Includes complete physical examinations for diagnostic purposes, regular periodic, school, entrance, insurance, and other examinations, check-up after operation, check-up of particular organ or part of body to see if treatment is needed, check-up unspecified, and examinations of communicable disease contacts.

(j) Includes service whether or not accompanied by illness.

(k) Includes osteopath, chiropractor, Christian Science practitioner, faith healer, midwife, and others of doubtful medical status.

APPENDIX TABLE 4-A

RELATION OF TOTAL MEDICAL COSTS TO FAMILY INCOME

Based on the Records for 8,581 White Families With Known Total Charges and the Records for 8,146 White Families With Known Total Expenditures, Surveyed for Twelve Consecutive Months, 1928–1931

Size of Community	Charges or Expenditures Expressed as Per Cent of Total Family Income in Families With Specified Income						
	Under $1,200	$1,200–$2,000	$2,000–$3,000	$3,000–$5,000	$5,000–$10,000	$10,000 and Over	All Incomes([a])
Cities with 100,000 persons and more:							
Charges........	9.3	4.7	4.8	4.3	4.2	4.1	4.5
Expenditures....	8.2	4.3	4.5	4.1	4.1	4.1	4.3
Cities with 5,000 to 100,000 persons:							
Charges.........	5.5	4.4	3.9	3.7	4.6	3.2	4.0
Expenditures....	4.7	4.1	3.7	3.6	4.5	3.2	3.8
Towns with less than 5,000 persons and rural areas:							
Charges.........	5.4	4.2	3.7	3.5	3.6	3.1	3.9
Expenditures....	4.8	3.9	3.7	3.4	3.7	3.4	3.8
All communities([b]):							
Charges........	5.9	4.3	4.1	3.9	4.1	3.7	4.2
Expenditures....	5.2	4.0	3.9	3.8	4.1	3.8	4.0

([a]) Totals are based on proportions of families adjusted to the income standard given in Appendix Table 1-A.

([b]) Adjusted for proportions of families in three community classes.

APPENDIX TABLE 5-A

THE AVERAGE CHARGE BY AGE AND FAMILY INCOME

Based on Data for 37,766 White Persons in 8,639 Families With Known Income, Surveyed for Twelve Consecutive Months, 1928–1931

Age in Years[a]	Average Charge per Person in Families With Specified Income[b]						
	Under $1,200	$1,200–$2,000	$2,000–$3,000	$3,000–$5,000	$5,000–$10,000	$10,000 and Over	All Incomes[c]
All ages[d]:							
Crude	$9.28	$13.23	$19.89	$28.38	$54.43	$114.97	$22.60
Adjusted[e]	10.57	14.70	21.88	29.99	56.10	115.12	24.16
Under 1	4.71	7.85	14.62	13.88	20.78	26.76	11.44
Under 5	4.16	7.43	12.02	12.78	27.56	71.43	12.23
5– 9	3.18	8.27	11.72	20.00	42.75	105.52	15.54
10–14	5.80	6.74	11.26	17.98	43.99	84.52	14.42
15–19	4.96	10.15	14.46	18.79	44.51	100.57	16.91
20–24	14.95	18.64	25.96	26.88	50.01	100.66	25.82
25–34	15.86	21.24	31.79	40.48	61.03	132.52	32.17
35–44	13.78	17.28	23.48	32.94	55.97	154.42	27.57
45–64	11.17	18.07	25.59	33.86	69.09	85.24	26.95
65 and over	20.52	18.09	37.39	70.97	120.38	249.60	45.65

(a) Age at the beginning of the survey year.
(b) All data have been adjusted for proportions in the several community classes.
(c) Adjusted for proportions in the several income classes.
(d) Excludes persons of unknown age and those born during the survey year.
(e) Adjusted for age proportions among white persons in the United States in 1930.

APPENDIX TABLE 6-A

THE COSTS OF MEDICAL CARE IN THE LOCAL COMMUNITIES OF THE UNITED STATES(a) AND IN COMMUNITIES WITH VARIOUS POPULATIONS: 1930

Based Upon Data From the Community Surveys

Type of Service	Total Expenditures in Communities With Specified Population					
	All Populations(a)	500,000 or More	50,000–500,000	10,000–50,000	5,000–10,000	Less than 5,000
All types	$3,307,800,000	$1,122,450,000	$891,419,000	$406,700,000	$96,748,000	$790,483,000
Physicians(b)	912,425,000	294,082,000	219,178,000	120,586,000	30,307,000	248,272,000
Drugs and medicines	818,110,000	228,980,000	170,484,000	102,624,000	32,953,000	283,069,000
Hospitals and sanatoria	740,242,000	327,755,000	222,119,000	76,446,000	13,123,000	100,799,000
Dentists	404,830,000	141,429,000	134,849,000	45,645,000	8,966,000	73,941,000
Private duty nurses	141,330,000	40,408,000	41,652,000	22,274,000	4,603,000	32,393,000
Other private practitioners	133,604,000	32,551,000	39,891,000	23,589,000	4,715,000	32,858,000
Public health	82,081,000	23,571,000	27,612,000	9,666,000	2,081,000	19,151,000
Miscellaneous	75,178,000	33,674,000	35,634,000	5,870,000	....	....

	Per-Capita Expenditures in Communities With Specified Population						Per Cent of Total Expenditures in Communities With Specified Population					
	All	500,000 or More	50,000–500,000	10,000–50,000	5,000–10,000	Less Than 5,000	All	500,000 or More	50,000–500,000	10,000–50,000	5,000–10,000	Less Than 5,000
All types	$26.94	$53.89	$40.54	$26.20	$16.41	$13.50	100.0	100.0	100.0	100.0	100.0	100.0
Physicians(b)	7.43	14.12	9.97	7.77	5.14	4.24	27.6	26.2	24.6	29.7	31.3	31.4
Drugs and medicines	6.66	10.99	7.75	6.61	5.59	4.84	24.7	20.4	19.1	25.2	34.1	35.8
Hospitals and sanatoria	6.03	15.74	10.10	4.92	2.23	1.72	22.4	29.2	24.9	18.8	13.6	12.7
Dentists	3.30	6.79	6.13	2.94	1.52	1.26	12.2	12.6	15.1	11.2	9.3	9.4
Private duty nurses	1.15	1.94	1.90	1.44	0.78	0.55	4.3	3.6	4.7	5.5	4.7	4.1
Other private practitioners	1.09	1.56	1.81	1.52	0.80	0.56	4.0	2.9	4.5	5.8	4.9	4.2
Public health	0.67	1.13	1.26	0.62	0.35	0.33	2.5	2.1	3.1	2.4	2.1	2.4
Miscellaneous	0.61	1.62	1.62	0.38	....	....	2.3	3.0	4.0	1.4	....	....

(a) These are not the total expenditures for the United States. The sum of expenditures in all local areas does not include expenditures which are made on a non-local, or on a state or national basis.

(b) Including drugs and medicines dispensed.

APPENDIX TABLE 7-A

RATIO OF PHYSICIANS TO POPULATION, BY GEOGRAPHICAL DIVISION AND BY STATES, 1900, 1910, 1920, 1929

Geographical Division and State	Physicians per 100,000 Population			
	1900(a)	1910(a)	1920(a)	1929(b)
Total United States	173	164	137	126
New England	186	175	146	140
Maine	174	175	144	127
New Hampshire	191	173	143	124
Vermont	215	204	161	139
Massachusetts	196	185	156	152
Rhode Island	158	147	122	118
Connecticut	167	147	125	127
Middle Atlantic	173	162	143	138
New York	190	176	163	161
New Jersey	137	127	111	103
Pennsylvania	164	156	131	124
South Atlantic	128	126	116	111
Delaware	152	133	123	110
Maryland	177	171	162	150
District of Columbia	336	347	280	407
Virginia	114	115	104	104
West Virginia	145	144	118	104
North Carolina	92	90	84	76
South Carolina	86	85	81	75
Georgia	132	124	114	100
Florida	130	142	148	126
East North Central	191	174	141	129
Ohio	203	178	137	129
Indiana	212	195	146	128
Illinois	205	188	166	148
Michigan	180	160	122	113
Wisconsin	120	121	106	103
East South Central	147	145	115	100
Kentucky	170	168	127	112
Tennessee	183	169	138	116
Alabama	116	121	97	87
Mississippi	107	116	93	82
West North Central	182	174	145	129
Minnesota	121	130	119	121
Iowa	180	188	148	128
Missouri	231	209	178	157
North Dakota	99	113	84	74
South Dakota	121	133	102	86
Nebraska	163	171	150	132
Kansas	204	182	144	119
West South Central	177	165	127	107
Arkansas	203	183	135	110
Louisiana	112	125	108	99
Oklahoma	187	188	130	104
Texas	195	164	131	109
Mountain	180	186	138	119
Montana	146	152	115	93
Idaho	134	153	111	89
Wyoming	162	162	134	105
Colorado	275	257	189	176
New Mexico	98	166	117	88
Arizona	181	142	114	98
Utah	110	132	112	101
Nevada	198	252	198	145
Pacific	256	230	180	159
Washington	185	191	146	120
Oregon	201	211	159	136
California	297	254	199	175

(a) Table 3, p 65, Committee on the Costs of Medical Care, Publication No 3.
(b) Computed from *1929 American Medical Directory*, population for 1929 estimated on the basis of the 1930 census

APPENDIX TABLE 8-A

PERCENTAGE OF PHYSICIANS AND OF THE POPULATION IN THE UNITED STATES (EXCLUDING NEW ENGLAND) IN PLACES OF VARIOUS SIZES, 1906, 1923, AND 1929

Size of Community	1906(a)		1923(a)		1929(b)	
	Physicians	Population	Physicians	Population	Physicians	Population
Less than 1,000(c)...	29.5	43.6	20.1	32.5	30.6	47.7
1,000– 2,500(c)...	11.6	9.9	9.4	11.2		
2,500– 5,000(c)...	7.3	6.0	6.8	6.7		
5,000– 10,000(c)...	5.9	5.3	6.2	5.7	6.5	4.8
10,000– 25,000(c)...	6.7	5.9	8.2	7.8	7.3	7.4
Less than 25,000.....	59.8	69.1	50.6	62.6	44.4	59.9
25,000– 50,000.....	6.3	4.5	5.8	5.2	5.5	5.2
50,000–100,000.....	4.7	4.4	6.2	5.3	6.3	5.3
100,000 and over.....	30.2	22.0	37.4	26.9	43.8	29.6

(a) Lewis Mayers and Leonard V. Harrison, *The Distribution of Physicians in the United States* (General Education Board, New York, 1924), p. 164–166.

(b) Private practitioners only. See Table 8-A of Publication No. 24, listed at the end of this volume.

(c) Exclusive of New England.

APPENDIX TABLE 9-A

RATIO OF DENTISTS TO POPULATION, BY GEOGRAPHICAL DIVISIONS AND BY STATES, 1925 AND 1928(a)

Geographical Division and State	Dentists per 100,000 Population	
	1925	1928
Total United States	56	56
New England	70	67
Maine	64	57
New Hampshire	57	57
Vermont	49	49
Massachusetts	80	80
Rhode Island	57	55
Connecticut	62	51
Middle Atlantic	73	60
New York	89	63
New Jersey	74	58
Pennsylvania	53	57
South Atlantic	34	36
Delaware	39	38
Maryland	47	50
District of Columbia	110	98
Virginia	27	30
West Virginia	37	40
North Carolina	29	29
South Carolina	20	24
Georgia	28	27
Florida	40	52
East North Central	57	64
Ohio	51	52
Indiana	55	63
Illinois	62	75
Michigan	48	55
Wisconsin	68	80
East South Central	28	28
Kentucky	31	32
Tennessee	38	35
Alabama	21	24
Mississippi	22	19
West North Central	64	66
Minnesota	70	72
Iowa	70	71
Missouri	61	69
North Dakota	45	46
South Dakota	52	49
Nebraska	71	71
Kansas	58	58
West South Central	30	32
Arkansas	22	23
Louisiana	35	43
Oklahoma	32	33
Texas	29	31
Mountain	53	51
Montana	51	44
Idaho	55	52
Wyoming	52	49
Colorado	73	69
New Mexico	25	25
Arizona	28	27
Utah	58	64
Nevada	65	72
Pacific	91	98
Washington	77	82
Oregon	101	101
California	94	103

(a) Table 3, p. 65, Committee on the Costs of Medical Care, Publication No. 3.

APPENDIX TABLE 10-A

RATIO OF NURSES TO POPULATION, BY GEOGRAPHICAL DIVISIONS AND BY STATES, 1900, 1910, 1920, 1930

Geographical Division and State	Nurses per 100,000 Population			
	1900(a)	1910(a)	1920(a)	1930(b)
Total United States	16	90	141	240
New England	26	152	227	391
Maine	20	110	172	286
New Hampshire	21	139	202	360
Vermont	18	132	198	298
Massachusetts	28	172	257	432
Rhode Island	30	137	168	297
Connecticut	27	139	218	402
Middle Atlantic	31	126	182	302
New York	38	152	221	340
New Jersey	26	106	138	267
Pennsylvania	24	101	152	266
South Atlantic	11	69	109	184
Delaware	14	85	100	214
Maryland	26	140	197	319
District of Columbia	67	267	416	589
Virginia	13	70	109	192
West Virginia	2	56	81	145
North Carolina	4	44	79	141
South Carolina	8	37	74	119
Georgia	7	55	84	134
Florida	5	52	105	193
East North Central	12	81	130	232
Ohio	11	81	119	235
Indiana	9	60	94	174
Illinois	15	93	157	256
Michigan	11	83	129	241
Wisconsin	9	71	129	215
East South Central	6	34	58	108
Kentucky	10	38	62	107
Tennessee	7	42	71	136
Alabama	3	33	56	102
Mississippi	2	19	39	81
West North Central	9	78	141	229
Minnesota	9	105	198	334
Iowa	8	82	150	229
Missouri	11	71	124	191
North Dakota	5	72	122	212
South Dakota	13	56	124	186
Nebraska	9	79	132	223
Kansas	6	62	103	186
West South Central	4	36	64	126
Arkansas	2	23	39	86
Louisiana	6	47	73	139
Oklahoma	2	29	59	113
Texas	3	40	73	140
Mountain	14	105	150	223
Montana	14	114	151	256
Idaho	4	78	114	167
Wyoming	2	80	115	195
Colorado	26	156	225	283
New Mexico	8	62	83	119
Arizona	11	95	122	247
Utah	7	64	124	193
Nevada	5	101	133	221
Pacific	33	173	255	374
Washington	12	137	194	293
Oregon	9	124	178	293
California	46	204	297	410

(a) From Publication No 3, listed at the end of this volume

(b) Computed from figures for trained nurses only presented in a monograph on *Nursing as a Factor in Community Medical Service*, by Ethel Johns, Nurse Associate, Committee on the Grading of Nursing Schools, July, 1932

APPENDIX TABLE 11-A

DISTRIBUTION OF PUBLIC HEALTH NURSES BY GEOGRAPHICAL DIVISIONS AND BY STATES, 1931

State	Number of Public Health Nurses	Nurses per 100,000 Population
Total United States	15,865	13
New England	2,185	27
Maine	123	15
New Hampshire	142	31
Vermont	52	14
Massachusetts	1,156	27
Rhode Island	194	28
Connecticut	518	32
Middle Atlantic	5,172	20
New York	2,673	21
New Jersey	1,000	25
Pennsylvania	1,499	16
South Atlantic	1,239	8
Delaware	42	18
Maryland	265	16
District of Columbia	102	21
Virginia	232	10
West Virginia	104	6
North Carolina	174	5
South Carolina	80	5
Georgia	145	5
Florida	95	6
East North Central	3,500	14
Ohio	977	15
Indiana	338	10
Illinois	921	12
Michigan	893	18
Wisconsin	371	13
East South Central	562	6
Kentucky	175	7
Tennessee	210	8
Alabama	138	5
Mississippi	39	2
West North Central	1,199	9
Minnesota	359	14
Iowa	191	8
Missouri	373	10
North Dakota	24	4
South Dakota	26	4
Nebraska	93	7
Kansas	133	7
West South Central	474	4
Arkansas	72	4
Louisiana	105	5
Oklahoma	66	3
Texas	231	4
Mountain	348	9
Montana	54	10
Idaho	30	7
Wyoming	15	7
Colorado	125	12
New Mexico	24	6
Arizona	53	12
Utah	38	7
Nevada	9	10
Pacific	1,104	13
Washington	139	9
Oregon	100	10
California	865	15

APPENDIX B

A NOTE ON METHOD FOR THE EXTRAPOLATION OF COMMUNITY BUDGETS FOR MEDICAL CARE

PER-CAPITA COST FOR MEDICAL CARE

Communities with populations of:

500,000 and over.—The per-capita cost figure for Philadelphia ($53.89) was used.

50,000-500,000.—A per-capita figure of $40.54 was obtained by weighting (*a*) the Philadelphia figure of $53.89 by the factor 1 and (*b*) the San Joaquin figure of $36.09 by 3.*

10,000-50,000.—The per-capita figures for Shelby, Franklin, and San Joaquin were averaged, and a new per-capita cost figure of $26.20 was obtained.

5,000-10,000.—A figure of $17.29 for places in this population group in the United States, exclusive of those in the ten southern states, was obtained by weighting the figure for Shelby by 2, that for Franklin by 2, that for Lee by 1, and that for Toombs by 1. This average was altered to account for the ten southern states represented in the surveys by special samples by weighting the population in such places in the United States, exclusive of those in the ten southern states, by $17.29, and the population in such places in the ten southern states by the per-capita cost figure in Lee County ($11.14). This gives a new per-capita figure of $16.41.

Towns with less than 5,000 persons and rural areas.—A figure of $15.29 was obtained for this population group, exclusive of the ten southern states, by weighting the per-capita cost figure for Shelby by 1, that for Franklin by 1, and that for the rural areas in the ten southern states ($9.31) by 2. To obtain an average cost figure for all such areas, including the ten southern states, the total population in this group exclusive of that in the ten southern states—41,310,850—was weighted by $15.29. The population in rural areas in Group I counties in the southern states (2,789,468) was weighted by the per-capita cost figure for Chester County—$6.45. Similarly, the population in the rural areas in Group II counties (5,551,638) was weighted by the Toombs County figure of $7.54; and the population in the rural areas in Group III counties (8,885,857) was weighted by the Lee County per-capita cost figure of $11.14. The average cost for medical care in these areas in the United States was $13.50.

United States.—The average cost for medical care multiplied by the population in each of the specified population groups gives the total cost for medical care in each group. The sum of these divided by the population in the United States gives a per-capita cost figure of $26.94.

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* The weighting factors attempt to allow for the proportion of the communities in each population class which are of approximately the same size as the surveyed communities, and for known or estimated differences in wealth and spending habits.

COMPOSITION OF THE MEDICAL BILL FOR THE UNITED STATES, 1930

Communities with populations of:

500,000 and over.—The amounts of money spent for various types of service in the medical bill in this group were obtained by applying the percentage distribution of the total bill in Philadelphia to the total bill in this group.

50,000-500,000.—To one-fourth of the total bill in this group was applied the distribution of the total bill in Philadelphia; and for three-fourths the distribution in San Joaquin was used.

10,000-50,000.—The distribution of the total medical bills in Shelby, Franklin, and San Joaquin was used in determining the composition of the total bill in this group—each county applying to one-third of the total bill.

5,000-10,000.—The total bill in this group was subdivided into the estimated amount spent in the ten southern states and in the rest of the United States. The estimated amount spent in the southern states—$9,444,150—was multiplied by the percentage distribution of the total bill in Lee County. The remaining $87,303,900 was distributed by multiplying the Shelby County figures for the composition of the medical bill by one-third of this amount, the Franklin County figures by one-third, the Lee County figures by one-sixth, and the Toombs County figures by one-sixth.

Towns with less than 5,000 persons and rural areas.—The total bill in this group was also subdivided into the amount spent in the South and in the rest of the United States. The percentage distribution of the medical bill in the ten southern states was applied to one-half of the total bill in such places in the United States, exclusive of the ten southern states; and the distributions in Shelby County and Franklin County were each applied to one-fourth of this total. The amount of the bill spent in Group I counties (as obtained by multiplying the population in such counties by the per-capita figure for Chester County) was distributed in the same way as the medical bill for Chester County. Similarly, the bills in Groups II and III counties were distributed on the basis of the composition in Toombs County and Lee County, respectively.

A percentage distribution was made of the total medical bill in each population group as well as in all communities in the United States as a whole. Per-capita figures were also obtained for each group.

MEDICAL BILL FOR THE UNITED STATES, 1929

One-tenth of the difference between the 1930 population and the 1920 population in the United States in each population group was subtracted from the 1930 population to give an estimate of the 1929 population. The new population figures were multiplied by the per-capita figures in each population group in the United States in 1930. The sum of the money for each type of service and population group gives an approximation to the total medical bill for local communities in the United States in 1929.

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Organized to study the economic aspects of the prevention and care of sickness, including the adequacy, availability, and compensation of the persons and agencies concerned

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* This list includes all persons associated with the staff, except those employed on a temporary basis. Most of those listed, however, were employed less than the full five years.

†25. THE ABILITY TO PAY FOR MEDICAL CARE. By Louis S. Reed, PH.D. 123 pages. January, 1933. Cloth, $2.00.

†26. THE INCIDENCE OF ILLNESS AND THE RECEIPT AND COSTS OF MEDICAL CARE AMONG REPRESENTATIVE FAMILIES: Experiences in Twelve Consecutive Months During 1928-1931. By I. S. Falk, PH.D., Margaret C. Klem, and Nathan Sinai, D.P.H. 346 pages. January, 1933. Cloth, $2.50.

27. THE COSTS OF MEDICAL CARE: A Summary of Investigations on the Economic Aspects of the Prevention and Care of Illness. By I. S. Falk, PH.D., C. Rufus Rorem, PH.D., C.P.A., and Martha D. Ring. 648 pages. January, 1933. Cloth, $4.00.

28. MEDICAL CARE FOR THE AMERICAN PEOPLE: The Final Report of the Committee on the Costs of Medical Care. 236 pages. November, 1932. Cloth, $1.50.

Abstracts of Reports Published by Collaborating Agencies

C1. DENTAL PRACTICE AND INCOME. By Maurice Leven, PH.D., Based Upon Data Collected Under the Direction of Dorothy Fahs Beck.‡

C2. THE PURCHASE OF MEDICAL CARE THROUGH FIXED, PERIODIC PAYMENTS. By Pierce Williams.§

Miscellaneous Contributions on the Costs of Medical Care

1. INSTITUTIONAL CONVALESCENCE. By E. H. Lewinski Corwin, PH.D.
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† A brief abstract of this report is available to interested persons upon request.

‡ An Abstract of *The Practice of Dentistry and the Incomes of Dentists in Twenty States: 1929*, by Maurice Leven, Ph.D., of the Research Staff of the Committee on the Costs of Medical Care, Based on Schedules Procured Under the Direction of Dorothy Fahs Beck of the Research Staff of the Committee on the Study of Dental Practice of the American Dental Association. The University of Chicago Press, Chicago, Illinois. 224 pages, February, 1932. Cloth, $2.00.

§ An Abstract of *The Purchase of Medical Care Through Fixed Periodic Payments*, by Pierce Williams. The National Bureau of Economic Research, Inc., New York, July, 1932. 300 pages. Cloth, $3.00.